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Station 155 (Sounding 259), near Antarctic Ice (see Chart 23).

STATION 155.

February 23, 1874; lat. $64^{\circ} 18' S.$, long. $94^{\circ} 47' E.$ Temperature of air at noon, $32^{\circ} \cdot 3$; mean for the day, $31^{\circ} \cdot 3$.Temperature of water at surface, $31^{\circ} \cdot 0$.

Depth, 1300 fathoms; deposit, Blue Mud, containing 11·84 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 12.15 A.M. brought ship to wind, and hove to. At 2 A.M. proceeded. At 8 A.M. numerous icebergs in sight. At noon 44 icebergs in sight. At 12.15 P.M. got up steam, and at 12.45 P.M. shortened and furled sails, and proceeded under steam S.S.E. At 4 P.M. numerous icebergs in sight. At 5 P.M. 88 icebergs in sight. At 5.30 P.M. observed pack ice from W.S.W. to S.S.E. At 5.45 P.M. stopped, and examined and sketched details of an iceberg. At 6 P.M. proceeded S.E. At 7.30 P.M. stopped and sounded in 1300 fathoms. No sign of Termination Land, numerous icebergs in sight, and pack ice from E. by N. to S.W. At 8.30 P.M. stopped and lay to; day very fine and sunny, but little wind. Observed flashes of aurora australis during the morning watch. Sighted during the day several whales, Cape pigeons, terns, prions, sooty albatrosses, and shot specimen of *Procellaria glacialis*, with *Tania* in its intestines and a Cephalopod beak in its stomach.

Distance at noon from Termination Land, 45 miles. Made good 84 miles. Amount of current for last two days 20 miles, direction S. $61^{\circ} E.$

The dredge was sent down next morning (24th) at 4 A.M., about 10 miles north of Station 155, but came up empty at 9.20 A.M., having probably never reached the bottom; weather stormy. At 10 A.M. Mr. Murray went away in a boat and picked up some discoloured portions of pack ice. The discoloration was, on examination, found to be due to the presence of Diatoms, Infusoria, *Globigerina*, and small Crustaceans, some of which were alive. Some water was carefully filtered through the finest linen cloth, with the view of finding Coccospheres or Rhabdospheres, but none of these were observed, nor had they been noticed on the surface or bottom since leaving the latitude of the Crozets.

Station 156 (Sounding 260), near Antarctic Ice (see Chart 23 and Diagram 9).

STATION 156.

February 26, 1874; lat. $62^{\circ} 26' S.$, long. $95^{\circ} 44' E.$ Temperature of air at noon, $34^{\circ} \cdot 8$; mean for the day, $33^{\circ} \cdot 2$.Temperature¹ of water:—

Surface, ...	$33^{\circ} \cdot 0$	200 fathoms, ...	$34^{\circ} \cdot 0$
100 fathoms, ...	$31^{\circ} \cdot 8$		$34^{\circ} \cdot 0$
	$32^{\circ} \cdot 0$	Bottom, ...	$31^{\circ} \cdot 3$
150 „	$34^{\circ} \cdot 0$		
	$34^{\circ} \cdot 0$		

¹ Actual readings of thermometers.

STATION 156.

Density at 60° F. :—

Surface, ...	1.02508	300 fathoms, ...	1.02565
100 fathoms, ...	1.02561	400 „	1.02555
200 „	1.02565	Bottom, ...	1.02515

Depth, 1975 fathoms ; deposit, Diatom Ooze, containing 2.08 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 8 A.M. got up steam. At 9.20 A.M. shortened and furled sails, and proceeded under steam to sound and trawl. Sounded in 1975 fathoms, and put over trawl. Obtained series of temperatures down to 200 fathoms. Weather fine, wind moderate. At 4.30 P.M. the trawl came up with numerous specimens,—one of the most interesting hauls made during the cruise. At 4.40 P.M. made sail, but, the wind rising to a gale, shortened and furled sails at 5.40 P.M., keeping during the night a position under the lee of an iceberg. Observed slight aurora between 12 and 1 A.M. Birds as usual. Sea a greenish-blue colour.

Distance at noon from Cape Otway, 2262 miles. Made good 87 miles. Amount of current 13 miles, direction N. 10° E.

SPECIES FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Polyrhabus oriformis, n.g., n.sp. One damaged specimen ; obtained at no other locality. Only species of the genus.

PENNATULIDA (Kölliker, Zool. pt. 2).

Umbellula carpenteri, n.sp. Several specimens ; obtained also at Station 157, 1950 fathoms.

DEEP-SEA MEDUSÆ (Haeckel, Zool. pt. 12).

Periphema regina, n.g., n.sp. One fragmentary specimen ; obtained at no other locality. Only species of the genus.

ASTEROIDEA (Sladen, Zool. pt. 51).

Lonchotaster forcipifer, n.g., n.sp. One specimen ; obtained also at Station 157, 1950 fathoms. The only other species of the genus (*Lonchotaster tartareus*) was taken at Station 89.

Chitonaster cataphractus, n.g., n.sp. One specimen ; obtained at no other locality. Only species of the genus.

Fragella fragilissima, n.sp. Obtained also at Station 146.



OPHIUROIDEA (Lyman, Zool. pt. 14).

STATION 156.

Ophioplinthus medusa, n.g., n.sp. Obtained at no other locality.

„ *grisea*, n.g., n.sp. Obtained at no other locality.

These are the only two species of the genus.

Ophiernus vallincola, n.g., n.sp. Obtained also at Stations 78 and 146. Only species of the genus.

Ophiocten pallidum, n.sp. Obtained also at Station 160, 2600 fathoms.

Amphiura patula, n.sp. Obtained at no other locality.

Ophiacantha cosmica, n.sp. For distribution see Station 122.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Goniocidaris canaliculata, Agassiz. For distribution see Station 147.

Pourtalesia hispida, n.sp. Obtained also at Station 147.

„ *phiale*, Wyville Thomson. One specimen; obtained at no other locality by the Challenger. Recorded from North Atlantic ("Porcupine").

HOLOTHURIOIDEA (Théel, Zool. pts. 13 and 39).

Elpidia willemöesi, n.sp. Four specimens; obtained at no other locality.

Scotoplanes insignis, n.g., n.sp. One specimen; obtained at no other locality.

Psychropotes longicauda, n.g., n.sp. One specimen; obtained also at Stations 157 and 298, 1950 and 2225 fathoms.

Benthodytes sordida, n.g., n.sp. One specimen; obtained also at Stations 157, 158, and 298, 1800 to 2225 fathoms.

Cucumaria abyssorum, n.sp. Three specimens; obtained also at Station 147.

Pseudostichopus villosus, n.g., n.sp. One specimen; for distribution see Station 61.

„ „ var. *violaceus*, nov. One specimen; obtained at no other locality.

GEPHYREA (Selenka, Zool. pt. 36).

Phascolion lutense, n.sp. One specimen; obtained also at Station 157, 1950 fathoms.

ANNELIDA (M'Intosh, Zool. pt. 34).

Nothria abbranchiata, n.sp. Several specimens; obtained also at Station 335, 1425 fathoms.

Ephesia antarctica, n.sp. Several specimens; obtained at no other locality.

Grubianella antarctica, n.g., n.sp. Several specimens; obtained also at Stations 157 and 158, 1950 and 1800 fathoms. Only species of the genus.

Leæna antarctica, n.sp. A few fragments; obtained at no other locality.

STATION 136.

AMPHIPODA (Stebbing, Zool. pt. 67).

Valettia coheres, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

ISOPODA (Beddard, Zool. pt. 33).

Scolis bromleyana, Willemoes-Suhm, n.sp. Two specimens; obtained also at Stations 164, 168, and 169, 400 to 1100 fathoms.

MACRURA (Spence Bate, Zool. pt. 52).

Hymenodora mollicutis, n.sp. One specimen; obtained also at Stations 87, 104, 133, 157, and 318.

POLYZOA (Busk, Zool. pt. 30).

Bicellaria infundibulata, n.sp. Obtained also at Station 147.

FISHES (Günther, Zool. pt. 57).

Melanonus gracilis, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

Gonostoma microdon, n.sp. One specimen; for distribution see Station 23.

Scopelus antarcticus, n.sp. One specimen; obtained also at Station 157, 1950 fathoms.

The fishes were alive when brought up. All the scales of *Melanonus* were off except two, which had a brilliant metallic reflection.

In addition to the foregoing, *Polythoa*, Actinian, and egg-capsule are recorded in the Station-book.

Excluding Protozoa, about 100 specimens of invertebrates and fishes were obtained at this Station, belonging to about 37 species, of which 32 are new to science, including representatives of 13 new genera; 13 of the new species and 6 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "The bases of the arms in the *Brisinga* [= *Freyella fragilisima*] were occupied by an ovary, in which the eggs attained a considerable size, nearly equal to those in the pouches of the Kerguelen *Schizaster*. In many groups of the lower animals it is possible to tell, from the size of the egg and the smaller or greater quantity of yolk to be disposed of by the future embryo, whether there is a metamorphosis or a direct development; the latter is very likely the case here. In the Gephyrean no proboscis nor anus was seen; the twisted intestine was as in *Sipunculus*, and was filled with mud shining through the skin. It lived in a mud tube. The worm-tubes, belonging to a *Nephtys*-like Annelid, were remarkable for the large Foraminifera used in their

construction. A *Palythoa* had settled on them. There was a capsule having three compartments, in which there had probably been eggs ; it belonged either to a Gasteropod or, as is more likely from the large size of the compartments, to a Cephalopod." STATION 156.

Moseley writes: "One of the large Holothurians had a deep purple colouring matter, soluble in spirit and giving two absorption bands."

Surface Organisms.—The following species are recorded from the surface at this Station :— ORGANISMS FROM SURFACE-NETS.

RADIOLARIA (Haeckel, Zool. pt. 40).

Aulodendron antarcticum, Haeckel.

Sagoscena pectorum, Haeckel.

Aulosphaera bisternaria, Haeckel.

Auloscena penicillus, Haeckel.

SCHIZOPODA (Sars, Zool. pt. 37).

Euphausia antarctica, n.sp.

PTEROPODA (Pelseneer, Zool. pt. 65).

Clio sulcata (Pfeffer).

FISHES (Günther, Zool. pt. 78).

Prymnothonus sp. (?), young.

In addition, the following are recorded in the note-books :—A few larvæ of *Chirodota* (?), small specimens of *Alciopa* and *Tomopteris*, a very large specimen of *Sagitta* from the trawl, a few Cypridinidæ, Calanids abundant, *Hyperia*, *Primno*.

Willemoes-Suhm writes: "The *Euphausiæ*, very common on the surface near the ice, were scarcer in clear water, where the Copepod genera *Calanus* and *Calanella* [= *Eucalanus*] were the most abundant animals."

Station 157 (Sounding 261), Termination Land to Melbourne (see Chart 24, and Diagrams 9 and 10). STATION 157.

March 3, 1874 ; lat. 53° 55' S., long. 108° 35' E.

Temperature of air at noon, 38°·3 ; mean for the day, 36°·9.

Temperature ¹ of water :—

Surface, ...	37·2	90 fathoms, ...	32·5
10 fathoms, ...	36·8	100 "	{ 32·7
20 "	36·8		{ 32·8
30 "	36·6	200 "	33·0
40 "	36·6	300 "	33·0
50 "	36·6	400 "	32·6
60 "	36·6	500 "	32·8
70 "	33·0	Bottom, ...	{ 32·0
80 "	32·5		{ 32·2

¹ Actual readings of thermometers.

STATION 156.

AMPHIPODA (Stebbing, Zool. pt. 67).

Valettia coheres, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

ISOPODA (Beddard, Zool. pt. 33).

Serolis bromleyana, Willemoes-Suhm, n.sp. Two specimens; obtained also at Stations 164, 168, and 169, 400 to 1100 fathoms.

MACRURA (Spence Bate, Zool. pt. 52).

Hymenodora mollicutis, n.sp. One specimen; obtained also at Stations 87, 104, 133, 157, and 318.

POLYZOA (Busk, Zool. pt. 30).

Bicellaria infundibulata, n.sp. Obtained also at Station 147.

FISHES (Günther, Zool. pt. 57).

Melanonus gracilis, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

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PTEROPODA (Pelseneer, Zool. pt. 65).

Clio sulcata (Pfeffer).

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Temperature ¹ of water :—

Surface, ...	37°·2	90 fathoms, ...	32°·5
10 fathoms, ...	36°·8	100 "	{ 32°·7
20 "	36°·8		{ 32°·8
30 "	36°·6	200 "	33°·0
40 "	36°·6	300 "	33°·0
50 "	36°·6	400 "	32°·6
60 "	36°·6	500 "	32°·8
70 "	33°·0	Bottom, ...	{ 32°·0
80 "	32°·5		{ 32°·2

¹ Actual readings of thermometers.

STATION 157.

Density at 60° F:—

Surface, ...	1.02509	100 fathoms, ...	1.02537
50 fathoms, ...	1.02507	Bottom, ...	1.02561

Depth, 1950 fathoms; deposit, Diatom Ooze, containing 19.29 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6.30 A.M. shortened and furled sails and proceeded under steam to trawl and sound. At 8 A.M. put over trawl, and at 9 A.M. sounded in 1950 fathoms. A small quantity of Diatom Ooze came up on the sounding tube. Several temperatures were taken down to 500 fathoms. Samples of water were taken from depths of 50 and 100 fathoms. The carbonic acid was determined in the bottom water, and amounted to 44.3 milligrammes per litre. The tow-nets, which were dragged at the surface of the sea and a few fathoms beneath, came up nearly filled with a slimy mass consisting almost entirely of Diatoms; besides the Diatoms there were many pelagic Foraminifera, Radiolarians, a few Copepods, Cypridinidæ, Hyperidæ, and Pteropods. At 2 P.M. commenced heaving in trawl, which came up at 4 P.M. with a large quantity of Diatom Ooze, many large and small stones, and numerous animals. This was one of the most successful hauls of the expedition. A few of the usual sea-birds were observed during the day.¹ The wind fell to a calm during the afternoon. There was a brilliant sunset, and at 11.45 P.M. a fine aurora australis, stretching in four concentric arcs over the S.E. to W. horizon.

Distance at noon from Cape Otway, 1721 miles. Made good 137 miles. Amount of current for the past three days 55 miles, direction N. 19° E.

The following species are recorded in the Zoological Reports from the trawl at this Station:—

ANIMALS FROM
TRAWL.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Cladorhiza moruliformis, n.sp. One specimen; obtained at no other locality.

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Holascus polejaerii, n.g., n.sp. One specimen; obtained at no other locality.

Balanella pipetta, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

PENNATULIDA (Kölliker, Zool. pt. 2).

Umbellula carpenteri, n.sp. Several specimens; obtained also at Station 156.

¹ The following species of birds were noticed while amongst the Antarctic ice:—*Oceanites oceanicus*, *Thalassidroma* (*Acipiter*) *antarctica*, *Oulfraga gigantea*, *Pagodroma nivalis*, *Daption capensis*, *Prion desolata* (*Phalacrocorax*) *fuliginosa*, *Stercorarius antarcticus*.

ACTINIARIA (Hertwig, Zool. pts. 15 and 73).

STATION 157

Cereus spinosus, n.sp. One specimen; obtained also at Station 237, 1875 fathoms.

Corallimorphus obtectus, n.g., n.sp. One specimen; obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Bathyactis symmetrica (Pourtalès). For distribution see Station 24.

Leptopenus discus, n.g., n.sp. Obtained also at Stations 147 and 323.

HYDROIDA.

Stephanoscyphus simplex, Allman, MS. (on the stones).

DEEP-SEA MEDUSÆ (Haeckel, Zool. pt. 12).

Atolla wyvillei, n.g., n.sp. Three specimens; obtained also at Station 318, 2040 fathoms. Only species of the genus. Recorded subsequently from Indian Ocean ("Investigator").

Disconalia pectyllis, n.g., n.sp. One specimen; obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Lonchotaster forcipifer, n.g., n.sp. Two specimens; obtained also at Station 156.

Hyphalaster planus, n.g., n.sp. Obtained at no other locality.

Hymenaster latebrosus, n.sp. Obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha loveni, n.sp. Obtained also at Stations 146, 147, 158 (?), and 160.

„ *fraterna*, n.sp. Obtained at no other locality.

„ *lienosa*, n.sp. Obtained at no other locality.

Ophiecten amitinum, n.sp. Obtained also at Stations 145 (?), 146, 149, and 152.

Ophiocymbium cavernosum, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Ophiacantha cosmica, n.sp. For distribution see Station 122.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Pourtalesia carinata, n.sp. Obtained also at Stations 147 and 298.

„ *ceratopyga*, n.sp. Obtained also at Stations 298 and 299, 2225 and 2160 fathoms.

Spatagocystis challengerii, n.g., n.sp. Obtained also at Station 147. Only species of the genus.

Genicopatagus affinis, n.g., n.sp. Obtained at no other locality. Only species of the genus.

STATION 147.

HOLOTHURIOIDEA (Théel, Zool. pts. 13 and 39).

Elpidia purpurea, n.sp. One specimen; obtained also at Station 147.„ *ambigua*, n.sp. Two specimens; obtained at no other locality.*Scotoplanes globosa*, n.g., n.sp. One specimen; obtained also at Station 299, 2160 fathoms.„ *robusta*, n.g., n.sp. One specimen; obtained at no other locality.*Peniagone horrifera*, n.g., n.sp. One specimen; obtained at no other locality.*Onciophanta mutabilis*, n.g., n.sp. Several specimens; obtained also at Stations 146, 160, 241, 244, 281, 299, and 325. Only species of the genus.*Psychropotes longicauda*, n.g., n.sp. Two specimens; obtained also at Stations 156 and 298.„ „ var. *monstrosa*, nov. One specimen; obtained at no other locality.„ „ var. *fusco-purpurea*, nov. Two specimens; obtained at no other locality.*Benthodytes sordida*, n.g., n.sp. Four specimens; obtained also at Stations 156, 158, and 298.*Pseudostichopus villosus*, n.g., n.sp. One specimen; for distribution see Station 61.

ENTOZOA (Linstow, Zool. pt. 71).

Prothelmus profundissima, n.g., n.sp. Two specimens; obtained at no other locality. Only species of the genus.

GEPHYREA (Selenka, Zool. pt. 36).

Phascolion lutense, n.sp. Two specimens; obtained also at Station 156.

ANNELIDA (McIntosh, Zool. pt. 34).

Latmonice producta, Grube, var. *wyvillei*, nov. One specimen; obtained also at Station 145.„ „ var. *benthaliana*, nov. One specimen; obtained also at Stations 147, 241, and 244.*Nothria armandi*, n.sp. One specimen; obtained at no other locality.*Trophonia wyvillei*, n.sp. One specimen; obtained at no other locality.*Maldanella antarctica*, n.g., n.sp. One specimen; obtained also at Stations 146 and 152.*Prasilla abyssorum*, n.sp. One specimen; obtained at no other locality.*Grubiniella antarctica*, n.g., n.sp. Several specimens; obtained also at Stations 156 and 158. Only species of the genus.*Pisidia abyssicola*, n.sp. One specimen; obtained at no other locality.

OSTRACODA (Brady, Zool. pt. 3).

STATION 157.

Macrocypris similis, n.sp. Obtained also at Stations 120, 305, and 344.*Bairdia bosquetiana*, Brady (?).*Cythere dasyderma*, n.sp. For distribution see Station 5.,, *dictyon*, n.sp. For distribution see Station 24.*Krithe producta*, n.sp. For distribution see Station 70.*Cytheropteron mucronalatum*, n.sp. Obtained also at Stations 70, 224, 246, 296, 300, and 302.

CIRRIPEDIA.

Scalpellum improvisum, n.sp., MS.

ISOPODA (Beddard, Zool. pt. 48).

Eurycope spinosa, n.sp. One fragmentary specimen; obtained at no other locality.

SCHIZOPODA (Sars, Zool. pt. 37).

Gnathophausia gigas, Willemoes-Suhm, n.g., n.sp. Moulded skin; obtained also at Station 69.*Boreomysis scyphops*, Sars. Obtained also at Stations 147 and 158.

MACRURA (Spence Bate, Zool. pt. 52).

Hymenodora mollicutis, n.sp. Two specimens; obtained also at Stations 87, 104, 133, 156, and 318.

PYCNOGONIDA (Hoek, Zool. pt. 10).

Phoxichilidium pilosum, n.sp. One or two specimens; obtained also at Station 147.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Neæra meridionalis, n.sp. One specimen; obtained at no other locality.*Lyonsiella papyracea*, n.sp. One specimen; obtained at no other locality.*Silenia sarsii*, n.g., n.sp. One specimen; obtained also at Station 325, 2650 fathoms.

Only species of the genus.

Kellia (?) sp. Two valves with damaged apices, making it impossible to determine with certainty their generic position.*Leda*, n.sp. Probably a young shell.*Lima* (*Limatula*), n.sp. One valve only with the umbo broken away; hardly sufficient to describe.

,, (?) Two very minute shells (mere fry), beyond identification either generically or specifically.

STATION 157.

SCAPHOPODA and GASTEROPODA (Watson, Zool. pt. 42).

Dentalium leptoskeles, n.sp. Obtained also at Station 160, 2600 fathoms.*Pleurotoma (Surcula) lepta*, n.sp. Obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Eledone rotunda, n.sp. One specimen; obtained also at Station 298, 2225 fathoms.

POLYZOA (Busk, Zool. pt. 30; Waters, pt. 79).

Bugula bicornis, n.sp. Obtained at no other locality.*Salicornaria magnifica*, n.sp. Obtained also at Stations 13, 122, and 323.*Onchopora sinclairii*, Busk. Obtained also at Stations 149, 150, and 151. [Waters calls it *Calwellia sinclairii* (Busk)].

TUNICATA (Herdman, Zool. pt. 76, Appendix A).

Abyssascidia vasculosa, n.g., n.sp. One specimen; obtained at no other locality.*Styela scricata*, n.sp. One specimen; obtained at no other locality.

FISHES (Günther, Zool. pt. 57).

Macrurus filicauda, n.sp. Three specimens; obtained also at Stations 146, 158, 299, 323, and 325.,, *armatus*, Hector. One specimen; obtained also at Stations 146, 147, 158, 246, and 271.*Scopelus antarcticus*, n.sp. One specimen; obtained also at Station 156.*Bathylagus antarcticus*, n.g., n.sp. One specimen; obtained at no other locality.

Excluding Protozoa, about 150 specimens of invertebrates and fishes were obtained at this Station, belonging to about 79 species, of which 69 are new to science, including representatives of 25 new genera; 29 of the new species and 4 new genera were not obtained elsewhere.

OBSERVATIONS FROM
THE DEPOSIT.

The following species of Foraminifera, Radiolaria, and Diatoms were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.):—

FORAMINIFERA (Brady, Zool. pt. 22).—The pelagic species, which make up about 52 per cent. of the carbonate of lime present in the deposit, are marked thus x. Although in the following list the bottom-living species with carbonate of lime shells are more

numerous than the pelagic species, yet the individuals are relatively very few in number, the list having been compiled from the examination of a very large quantity of the deposit. While the shells of the pelagic forms are very small when compared with those found in tropical areas, on the other hand, the Miliolidae, Astrorhizidae, Lituolidæ, and other bottom-living forms are represented by very large and beautiful forms. Some specimens of *Miliolina* are one-eighth of an inch in diameter; specimens of *Reophax* and *Rhabdammina* are over an inch in length. Among the arenaceous species there are many interesting illustrations of the mode in which these Rhizopods select and arrange the various particles in the deposit to form their tests. *Astrorhiza crassatina* here forms its test almost exclusively of the spherical Radiolarian *Cromyosphæra antarctica*; *Storthosphæra* selects the finest mineral particles, with an occasional larger particle of quartz or palagonite; one form selects only the shells of the pelagic Foraminifera, and another only the smallest Diatomaceæ; *Reophax nodulosa* makes use of many large *Coscinodisci*, arranging them flatways over the surface, and *Rhabdammina abyssorum* forms its tube of the larger angular fragments of quartz, felspar, magnetite, and other mineral particles.

Biloculina depressa, d'Orbigny.

„ „ var. *murrhyna*, Schwager.

„ *irregularis*, d'Orbigny.

„ *ringens* (Lamarck).

„ *sphæra*, d'Orbigny.

Miliolina circularis (Bornemann) (?).

„ *fichteliana* (d'Orbigny).

„ *oblonga* (Montagu).

„ *seminulum* (Linné).

„ *venusta* (Karrer).

Keramosphæra murrayi, Brady.

Astrorhiza crassatina, Brady.

Pelosina rotundata, Brady (?).

Storthosphæra sp. (?).

Bathysiphon filiformis, Sars (?).

Hyperammina vagans, Brady.

Rhabdammina abyssorum, Sars.

Rhizammina algæformis, Brady.

Reophax adunca, Brady.

„ *diffugiiformis*, Brady.

„ *nodulosa*, Brady.

„ *pilulifera*, Brady.

„ *scorpiurus*, Montfort.

Haplophragmium latidorsatum (Bornemann).

„ *turbinatum*, Brady.

Placopsilina vesicularis, Brady.

Thurammina albicans, Brady (?).

„ *compressa*, Brady.

„ *papillata*, Brady.

Hormosina ovicula, Brady.

Ammodiscus charoides, Jones and Parker.

Trochammina pauciloculata, Brady.

Webbina clavata, Jones and Parker.

„ *hemisphærica*, Jones, Parker, and Brady.

Cyclammina cancellata, Brady.

Verneuilina pygmæa, Egger.

Gaudryina pupoides, d'Orbigny.

Clavulina communis, d'Orbigny.

Pleurostomella brevis, Schwager.

„ (?) sp.

Cassidulina bradyi, Norman.

„ *crassa*, d'Orbigny.

„ *subglobosa*, Brady.

Lagena alveolata, Brady.

„ *botelliformis*, Brady.

„ *globosa* (Montagu).

„ *lævigata* (Reuss).

„ *lævis* (Montagu).

Nodosaria communis, d'Orbigny.

Vaginulina linearis (Montagu).

Cristellaria convergens, Bornemann.

„ *crepidula* (Fichtel and Moll).

Polymorphina angusta, Egger.

„ *thouini*, d'Orbigny.

Uvigerina asperula, Czjzek.

„ *pygmæa*, d'Orbigny.

× *Globigerina bulloides*, d'Orbigny.

× „ „ var. *triloba*, Reuss.

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× *Gladyrina d'arctrei*, d'Orbigny.
 × " *inflata*, d'Orbigny.
Pulvinulina sphaerulata, d'Orbigny.
Spirulina decorata, Brady.
Truncatulina lobatula (Walker and Jacob).
 " *pygmaea*, Hantken.
 " *uigeriana* (d'Orbigny).

Anomalina grosserugosa (Gumbel) (?).
 × *Pulvinulina crassa* (d'Orbigny).
 " *exigua*, Brady.
 × " *melchioriana* (d'Orbigny).
 × " *patagonica* (d'Orbigny).
Rotalia soldanii, d'Orbigny.
Nonionina pompilioides (Fichtel and Moll).

RADIOLARIA (Haeckel, Zool. pt. 40).—The sediment which remains after removing the Diatoms and Foraminifera and larger mineral particles is almost entirely composed of Radiolarians, mainly belonging to a few species of Sphaeroidea, which make up about nine-tenths of the whole mass. By far the commonest of these Spumellaria is *Cromyosphaera antarctica*, which is probably genetically related with the very similar form, *Cromyomma perspicuum*, occurring on the surface at the same Station. Of the other Spumellaria the Discoidea are the most abundant, particularly the spongy forms (Spongodiscida, e.g., *Spongodiscus*, *Spongotrochus*, *Stylotrochus*). Particularly noteworthy is a new genus, *Spongopyle*, not described in the Report: it is a Spongodiscid with a marginal osculum like that of the Porodiscid *Ommatodiscus*, which also occurs at this Station. In contrast to the large number of Sphaeroidea and Discoidea, the Prunoidea and Larcoidea are present only as isolated specimens.

Very few species of Nassellaria are present, but among them the Botryodea, which are generally rare, are rather abundant, especially *Botryocella borealis* and *Botryopyle cribrata*. The most common Cyrtioidea are a few cosmopolitan forms, for example, *Cornutella clathrata*, *Cornutella cannulata*, and *Lithomitra lineata*.

The Acantharia are only represented in this deposit by a single rare species, *Pantopelta icosaspis*.

The Phaeodaria are represented by a few remarkable forms, such as *Sagenoscena penicillata*, *Aulosphaera bisternaria*, *Cannosphaera antarctica*, and *Conchasma hippurites*; all these, however, are rare.

The following list has been compiled by Dr. F. Dreyer:—

I. SPUMELLARIA.

a. Sphaeroidea.

Cromyosphaera solida, Haeckel.
 " *papillata*, Haeckel.
 " *antiqua*, Haeckel.
 " *antarctica*, Haeckel.
Cromyosphaera nodosa, Ehrenberg.
Thomaspheera diplocorus, Haeckel.
Cromyosphaera antarctica, Haeckel.
Stylosphaera spongiata, Haeckel.
Spongopylea antarctica, Haeckel.
Spongopylea antarctica, Haeckel.
Amphispheera septima, Haeckel.
Stenocentron antarcticum, Haeckel.

Hexacantium hexacanicum, Haeckel.

" *antarcticum*, Haeckel.

Acanthosphaera antarctica, Haeckel.

Cladococcus antarcticus, Haeckel.

" *dendrites*, Haeckel.

Halomma antarcticum, Haeckel.

Actinomma pachycapsa, Haeckel.

Pityomma piniferum, Haeckel.

Cromyomma perspicuum, Haeckel.

Rhizosphaera trigonacantha, Haeckel.

" *antarctica*, Haeckel.

b. Prunoidea.

Cromyocarpus quadrifarius, Haeckel.

Cromyatractus tetraphractus, Haeckel.

Spongurus cylindricus, Haeckel.
Spongocore cincta, Haeckel.

c. Discoidea.

Porodiscus flustrella, Haeckel.
 „ *heterocyclus*, Haeckel.
 „ *spiralis* (Ehrenberg).
Ommatodiscus stöhrii, Haeckel.
 „ *laevigatus*, Stöhr.
Stylodictya multispina, Haeckel.
Rhopalastrum irregulare, Haeckel.
Euchitonia muelleri, Haeckel.
Spongodiscus resurgens, Ehrenberg.
 „ *spiralis*, Haeckel.
Spongopyle osculosa, Haeckel.
 „ *setosa*, Haeckel.
Stylotrochus antarcticus, Haeckel.
 „ *challengeri*, Haeckel.
Spongotrochus murrayi, Haeckel.
 „ *wyvillei*, Haeckel.
 „ *moseleyi*, Haeckel.
 „ *willemoesii*, Haeckel.
 „ *scutella*, Haeckel.

d. Larcoidea.

Stypolarcus spongiosus, Haeckel.
Larcospira oliva, Haeckel.

II. ACANTHARIA.

Pantopelta icosaspis, Haeckel.

III. NASSELLARIA.

a. Plectoidea.

Hexaplagia antarctica, Haeckel.

b. Spyroidea.

Tripospyris eucolpos, Haeckel.
Dictyospyris tetrastoma, Ehrenberg.
Dictyospyris enneastoma, Haeckel.

c. Botryodea.

Androspyris aptenodytes, Haeckel.
Botryocella borealis, Ehrenberg.
Botryopyle cribrosa (Ehrenberg).
Botryocytis quinaria, Ehrenberg.
Botryocampe inflata, Ehrenberg.

d. Cyrtoida.

Cyrtocalpis ovulum, Haeckel.
Cornutella clathrata, Ehrenberg.
 „ *annulata*, Ehrenberg.
Cornutanna orthoconus, Haeckel.
Halicapsa hystrix, Haeckel.
Dictyocephalus antarcticus, Haeckel.
Dicolocapsa megacephala, Haeckel.
Dictyophimus antarcticus, Haeckel.
Theocorys plutonis, Haeckel.
Lithostrobilus bicornis, Haeckel.
Theocalyptra cornuta (Ehrenberg).
Lithostrobilus cornutella, Bütschli.
Lithomitra lineata (Ehrenberg).
Eucyrtidium chrysalidium, Haeckel.

IV. PHÆODARIA.

Aulactinium actinosphaerium, Haeckel.
Sagenoscena penicillata, Haeckel.
Aulosphæra bisternaria, Haeckel.
Aulastrum dichoceros, Haeckel.
Aulodictyum hydrodictyum, Haeckel.
Cannosphæra antarctica, Haeckel.
Challengeria naresii, Murray.
 „ *trifida*, Haeckel.
Conchasma hippurites, Haeckel.

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DIATOMACEÆ.—Considerable differences are recognisable between the general appearance of Diatom preparations made from surface gatherings as contrasted with those procured from the ooze forming the bottom in this locality. By far the most abundant form at the surface was the peculiar, very elongated, flexuous *Thalassiothrix longissima*, var. *antarctica*, Cleve and Grunow [= *Synedra thalassiothrix*, Cleve in parte], a species which has also been recorded as forming large floating masses in the Arctic Ocean.¹ In the Antarctic its frustules were found arranged in little bundles—from ten to twelve together—fastened together loosely at one end, but separate at the other, the whole being loosely twisted into a spindle. In preparations isolated frustules of it

¹ *Bihang til K. Svensk. Vetensk. Akad. Handl.*, Bd. i., No. 13, Stockholm, 1873.

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occur but rarely, often two are found closely apposed, but not uncommonly three, four, or even more are so placed. It is, perhaps, with *Chaetoceros remotum*, Cleve and Grunow [= *C. janischianum*, Castracane], the most characteristic species found on the surface.

The Chaetocerotidae and Rhizosoleniæ are abundantly represented in the surface waters, but they are only represented by the terminal calyptræ of the latter in the bottom ooze. Most of the delicately curved, though often large, forms of *Corethron*, and the singular cylindrical *Dactyliosolen*, have only been found in surface gatherings, whilst the remarkable *Trachysphenia australis*, Petit, var. *antarctica* (Schwarz) [= *Fragilaria antarctica*, Castracane], which abounds in the ooze, is much less common in the surface gatherings. Frustules of *Coscinodisci* and *Actinocyclus* are also much less numerous in the surface gatherings than in the ooze at the bottom, but nearly all the species are present in the superficial waters found in the ooze.

The contents of the alimentary canals of several of the Echinoderms and Annelids were examined with the view of ascertaining whether or not a predilection was exhibited by the animals for any particular species of Diatoms; it was found, however, that they made use of the ooze as a whole, in all probability taking in the immediate surface layer containing specimens recently fallen from the surface, which, doubtless, still contained some organic matter. The tubes of the Annelids, and the test of the Foraminifera *Reophax nodulosa*, contained many of the large *Coscinodisci*, which would appear to have been to a greater extent selected than the others in the deposit.

The form, which Count Castracane has indicated as "*Fragilaria?* an *Terebraria?* sp.,"¹ may be regarded as the southern representative of *Fragilaria oceanica*, Cleve, from the Arctic Ocean, with which it shows in the general arrangement and character of the frustules a considerable amount of agreement. Among the Diatoms observed at this Station the following have been also recorded in the Arctic zone, a few of the species being almost cosmopolitan:—

<i>Nannula aspera</i> , Ehrenberg.	<i>Coscinodiscus subtilis</i> , Ehrenberg, var. <i>glacialis</i> , Grunow.
<i>Triceratium arcticum</i> , Brightwell.	" <i>oculus-iris</i> , Ehrenberg.
<i>Rhizosolenia setigera</i> , Brightwell.	" <i>centralis</i> , Ehrenberg.
" <i>styliformis</i> , Brightwell.	" <i>normanni</i> , Gregory.
<i>Chaetoceros decipiens</i> , Cleve.	" <i>kützingeri</i> , A. Schmidt.
" <i>atlanticum</i> , Cleve.	" <i>excentricus</i> , Ehrenberg.
<i>Coscinodiscus decrescens</i> , var. <i>polaris</i> , Grunow.	" <i>lineatus</i> , Ehrenberg.
" " var. <i>repleta</i> , Grunow.	

Among the peculiarly Antarctic species found at this Station may be noted the following:—

<i>Planopectus antarcticus</i> , Grunow.	<i>Trachysphenia australis</i> , Petit, var. <i>antarctica</i> (Schwarz) [= <i>Fragilaria antarctica</i> , Castracane].
<i>Amplicyrtus antarctica</i> , Grunow.	

¹ Det. Chall. Exp., part iv. p. 47, pl. xxv. fig. 1.

Rhizosolenia inermis, Castracane.

Dactyliosolen antarcticus, Castracane.

Chaetoceros remotum, Cleve and Grunow [= *Chaetoceros janischianum*, and var. *lata*, Castracane].

Synedra lanceolata, Castracane.

Diatoma rhombicum, O'Meara, var. *oceanica*, Rattray.

Corethron criophilum, Castracane.

" " var. *tumescens*, Rattray, MS.

" *murrayanum*, Castracane.

" *hispidum*, Castracane.

" *pennatum* [= *Actiniscus*, Grunow].

Coscinodiscus lunæ, Ehrenberg [= *Coscinodiscus cycloteres*, Castracane].

Actinocyclus oliveranus, O'Meara.

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The following is a complete list of the species observed by Mr. Rattray and Mr. Comber:—

Navicula subtilis (Gregory) [= *Pinnularia criophila*, Castracane].

Pleurosigma directum, Cleve.

Thalassiothrix longissima, Grunow, var. *antarctica*, Cleve and Grunow [= *Synedra thalassiothrix*, Cleve in parte].

" *nitzschoides*, Grunow, var. *lanceolata*, Grunow.

Synedra lanceolata, Castracane.

" *filiformis*, Grunow.

Trachysphenia australis, Petit, var. *antarctica* (Schwarz) [= *Fragilaria antarctica*, Castracane].

Fragilaria (?) an *Terebraria* (?) sp., Castracane.

" *dubia*, Grunow.

Diatoma rhombicum, O'Meara, var. *oceanica*, Rattray.

Nitzschia constricta, Gregory, var. *antarctica*, Rattray.

" " var. *similis*, Grunow.

Rhizosolenia styliformis, Brightwell.

" *furcata*, Rattray, MS.

" *setigera*, Brightwell.

Corethron criophilum, Castracane.

Biddulphia weissflagii, Grunow.

Hemiaulus antarcticus, Ehrenberg [= *Eucampia balaustium*, and var. *minor*, Castracane].

Asteromphalus hookeri (Ehrenberg), Ralfs.

" forma *buchii* (Ehrenberg).

" forma *humboldtii* (Ehrenberg).

" forma *cuvierii* (Ehrenberg).

" forma *denarius* (Janisch).

" *darwinii*, Ehrenberg.

" *brookei*, Bailey.

" *antarcticus*, Castracane.

Hyalodiscus radiatus, O'Meara, var. *arctica*, Grunow.

Hemidiscus cuneiformis, Wallich.

" sp. (?).

Triceratium arcticum, Brightwell, var. *keruelensis*, Grunow.

Actinocyclus oliveranus, O'Meara.

Coscinodiscus margaritaceus, Castracane.

" *lunæ*, Ehrenberg [= *Coscinodiscus cycloteres*, Castracane].

" *grandis*, Rattray, MS.

" " var. *sparsa*, Rattray, MS.

" *excentricus*, Ehrenberg.

" *atlanticus*, Castracane, and var.

" *lineatus*, Ehrenberg.

" *lentiginosus*, Janisch.

" " var. *maculata*, Grunow.

" *subtilis*, Ehrenberg.

" " var. *glacialis*, Grunow.

" *tumidus*, Janisch.

" " var. *fasciculata*, Rattray.

" *radiatus*, Ehrenberg.

" *decrescens*, Grunow, var. *polaris*, Grunow.

" " var. *repleta*, Grunow.

" *fasciculatus*, A. Schmidt.

" *griseus*, Greville, var. *gallopagensis*, Grunow (?).¹

" *curvatulus*, Grunow, var. *maculata*, Rattray, MS.

" " var. *elegans*, Rattray, MS.

" " var. *subocellata*, Grunow.

" *tuberculatus*, Greville, var. *excentrica*, Rattray, MS.

" " var. *antarctica*, Rattray, MS.

" *elegans*, Greville.

" *robustus*, Greville.

" " var. *minor*, Rattray, MS.

" *möllerii*, A. Schmidt, var. *antarctica*, Rattray.

¹ A few specimens occur in the ooze which, though not absolutely identical with this form as figured by van Heurck (Synop. d. Diat. d. Belg.), are yet more closely allied to it than to any other.

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Coscinodiscus leuarius, A. Schmidt.
 „ *marginatus*, Ehrenberg.
 „ *minor*, Ehrenberg.
 „ *kutzingii*, A. Schmidt, var. *glacialis*,
 Grunow.
 „ *denticulatus*, Castracane.
 „ *normanni*, Gregory.
 „ *stellaris*, Roper.
 „ *africanus*, Janisch.
 „ „ var. *wallishiana*, Grunow.
 „ *centralis*, Ehrenberg.
 „ *conversus*, A. Schmidt.

Coscinodiscus oculus-iridis, Ehrenberg.
 „ *asteromphalus*, Ehrenberg.
 „ *concinus*, Smith.
 „ *elegantulus*, Greville.
 „ *rotula*, Grunow.
 „ *apollinis*, Ehrenberg, var. *compacta*,
 Rattray.
 „ *impolitus*, Rattray [= *C. antarcticus*,
 Castracane].
Melosira sp. (?).
Brunia mirabilis, Tempère.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species of Radiolaria and Diatomaceæ are recorded from the surface at this Station :—

RADIOLARIA (Haeckel, Zool. pt. 40).—In striking contrast to the wealth of forms in the deposit at this Station is the uniformity of the Radiolarian surface fauna. This doubtless arises from the fact that the tow-nets were only dragged through a relatively short distance of the surface waters, whereas the deposit at the bottom represents the accumulation of forms which have fallen from the surface during an immense period of time. The absence of some species of Acantharia and Phæodaria in the deposit, when compared with their relative abundance in the surface-net gatherings, is to be accounted for by the structure and composition of the skeletons, which are more readily dissolved after the death of the animal than other Radiolaria. Certain species of Acantharia and Phæodaria are the most abundant here, and represented by numerous individuals. Of the Acantharia the most abundant are *Acanthonia claparedei*, *Acanthostaurus purpurascens*, and *Amphilonche lanceolata*, and of the Phæodaria, the species of *Challengeron*.

I. SPUMELLARIA.

a. Sphæroides.

Styctosphæra spongiacea, Haeckel.
Acanthosphæra antarctica, Haeckel.
Crossosomma perspicuum, Haeckel.
Rhizosphæra trigonacantha, Haeckel.
 „ *antarctica*, Haeckel.

b. Discoides.

Prodium flutrella, Haeckel.
Stylodictya multispina, Haeckel.
Euphotonia mulleri, Haeckel.
Stylodictyon challengerii, Haeckel.

II. ACANTHARIA.

Acanthonia claparedei, Haeckel.
Acanthostaurus purpurascens, Haeckel.

Amphilonche lanceolata, Haeckel.
Porocapsa coronodon, Haeckel.

III. NASSELLARIA.

Dictyospyria telrastoma, Ehrenberg.
Cyrtocalpis ovulum, Haeckel.
Cornutella clathrata, Ehrenberg.

IV. PHÆODARIA.

Dictyocha stapelia, Haeckel.
Distephanus speculum, Haeckel.
Aulodendron antarcticum, Haeckel.
Aulosena penicillus, Haeckel.
Challengeron pearceyi, Haeckel.
 „ *seirei*, Murray.
 „ *balfouri*, Murray.
 „ *richardii*, Haeckel.

DIATOMACEÆ.—The following species were observed by Mr. Rattray :—

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<i>Navicula subtilis</i> (Gregory) [= <i>Pinnularia criophila</i> , Castracane].	<i>Chaetoceros atlanticum</i> , Cleve.
<i>Pleurosigma antarcticum</i> , Grunow.	„ „ var. <i>attenuata</i> , Cleve and Grunow.
<i>Amphiprora antarctica</i> , Grunow.	„ <i>antarcticum</i> , Grunow.
<i>Thalassiothrix longissima</i> , Grunow, var. <i>antarctica</i> , Cleve and Grunow [= <i>Synedra thalassiothrix</i> , Cleve in parte].	„ <i>dispar</i> , Castracane.
<i>Trachysphenia australis</i> , Petit, var. <i>antarctica</i> (Schwarz) [= <i>Fragilaria antarctica</i> , Castracane].	„ <i>sigmoidea</i> , Rattray, MS.
<i>Fragilaria</i> (?) an <i>Terebraria</i> (?) sp., Castracane.	<i>Corethron hispidum</i> , Castracane.
<i>Rhizosolenia inermis</i> , Castracane.	„ <i>splendens</i> , Rattray, MS.
„ <i>setigera</i> , Brightwell.	„ <i>murrayanum</i> , Castracane.
„ <i>styliformis</i> , Brightwell.	„ <i>criophilum</i> , Castracane.
<i>Dactylosolen antarcticus</i> , Castracane.	„ „ var. <i>tumescens</i> , Rattray, MS.
<i>Chaetoceros decipiens</i> , Cleve.	<i>Hemiaulus antarcticus</i> , Ehrenberg [= <i>Eucampia balaustium</i> , Castracane].
„ <i>remotum</i> , Cleve and Grunow [= <i>Chaetoceros janischianum</i> , and var. <i>lata</i> , Castracane].	<i>Actinocyclus oliveranus</i> , O'Meara, and forma <i>minor</i> .
„ „ var. <i>robusta</i> , Rattray, MS.	<i>Coscinodiscus lunæ</i> , Ehrenberg [= <i>Coscinodiscus cycloteres</i> , Castracane].
„ „ var. <i>biaurita</i> , Rattray, MS.	„ <i>excentricus</i> , Ehrenberg.
„ <i>boreale</i> , Bailey, var. <i>brightwellii</i> , Cleve [= <i>Chaetoceros criophilum</i> , Castracane].	„ <i>lineatus</i> , Ehrenberg.
	„ <i>lentiginosus</i> , Janisch.
	„ <i>tumidus</i> , Janisch.

In addition to the foregoing, the following species were observed by Mr. Comber :—

<i>Navicula aspera</i> , Ehrenberg.	<i>Coscinodiscus convexus</i> , A. Schmidt.
<i>Synedra lanceolata</i> , Castracane.	„ <i>margaritaceus</i> , Castracane.
<i>Nitzschia scalaris</i> , W. Smith.	<i>Melosira</i> sp. (?)
<i>Coscinodiscus anguste-lineatus</i> , A. Schmidt.	<i>Asteromphalus brookei</i> , Bailey.
„ <i>kutzingii</i> , A. Schmidt, var. <i>glacialis</i> , Grunow.	„ <i>hookerii</i> , Ehrenberg.
„ <i>denarius</i> , A. Schmidt.	<i>Rhizosolenia indica</i> , Peragallo.
„ <i>subtilis</i> , Ehrenberg.	<i>Chaetoceros tetrachæta</i> , Ehrenberg (?).
„ <i>oculus-iridis</i> , Ehrenberg.	<i>Bacteriastrum varians</i> , Lauder.
„ <i>africanus</i> , Janisch, var. <i>wallichiana</i> , Grunow.	<i>Corethron pennatum</i> [= <i>Actiniscus</i> , Grunow].

Among the masses of Diatoms only comparatively few animals were observed, viz., Cypridinidæ, Copepods, *Hyperia*, *Primno*, and a few small shells of *Spirialis* [= *Limacina*].

Station 158 (Sounding 262), Termination Land to Melbourne (see Chart 24, and Diagrams 9 and 10). STATION 158.

March 7, 1874; lat. 50° 1' S., long. 123° 4' E.

Temperature of air at noon, 48°·5; mean for the day, 47°·4.

(SUMMARY OF RESULTS CHALL. EXP.—1893.)

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Temperature of water :—

Surface, ...	45.0	800 fathoms, ...	36.0
50 fathoms, ...	44.5	900 „	36.0
100 „	43.4	1000 „	36.0
150 „	42.3	1100 „	36.0
200 „	41.3	1200 „	35.7
300 „	39.5	1300 „	35.3
400 „	38.2	1400 „	35.0
500 „	37.0	1500 „	34.7
600 „	36.3	Bottom, ...	33.5
700 „	36.0		

Density at 60° F. :—

Surface, ...	1.02522	200 fathoms, ...	1.02548
50 fathoms, ...	1.02522	315 „	1.02546
100 „	1.02544	Bottom, ...	1.02554

Depth, 1800 fathoms; deposit, Globigerina Ooze, containing 85.31 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 5 A.M. got up steam. At 6.40 A.M. shortened and furled sails. Put trawl over. At 8.30 A.M. sounded in 1800 fathoms. Obtained serial temperatures down to 1500 fathoms. The carbonic acid was determined in water from 50 fathoms, and amounted to 68.3 milligrammes per litre. At 2 P.M. commenced heaving in trawl, which came up at 3.45 P.M. with a quantity of ooze, some pebbles, and numerous specimens. At 4 P.M. made sail.

Distance at noon from Cape Otway, 1099 miles. Made good 180 miles. Amount of current 6 miles, direction S. 48° E.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Hyalonema conus, n.sp. One specimen; obtained at no other locality.

ACTINIARIA (Hertwig, Zool. pt. 15).

Tentidium cingulatum, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

CRINOIDEA (Carpenter, Zool. pt. 60).

Thaumatocrinus renovatus, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Prismachocrinus abyssorum, n.g., n.sp. One specimen; obtained also at Station 147.

ASTEROIDEA (Sladen, Zool. pt. 51).

STATION 158.

- Hymenaster nobilis*, Wyville Thomson, n.sp. Obtained at no other locality.
Recorded subsequently from Indian Ocean ("Investigator").
- „ *formosus*, n.sp. Obtained at no other locality.
- „ *sacculatus*, n.sp. Obtained at no other locality.
- „ *cælatus*, n.sp. Obtained at no other locality.
- „ *crucifer*, n.sp. Obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

- Ophioglypha loveni*, n.sp. (?). Obtained also at Stations 146, 147, 157, and 160.
- „ *minuta*, n.sp. Obtained also at Station 146.
- Ophiacantha cosmica*, n.sp. For distribution see Station 122.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Urechinus naresianus*, n.g., n.sp. Obtained also at Stations 146, 147, and 302.
Only species of the genus.
- Cystechinus wyvillii*, n.g., n.sp. Obtained also at Stations 146, 147, 296, 299, and 300.

HOLOTHURIOIDEA (Théel, Zool. pts. 13 and 39).

- Peniagone naresi*, n.g., n.sp. One injured specimen; obtained at no other locality.
- „ *challengeri*, n.g., n.sp. Two specimens; obtained at no other locality.
- Lætmogone wyville-thomsoni*, n.g., n.sp. One specimen; obtained also at Stations 147, 232, and 300.
- Benthodytes sanguinolenta*, n.g., n.sp., var. *marginata*, nov. One specimen; the species obtained also at Stations 160, 295, and 298, 500 to 2600 fathoms.
- „ *sordida*, n.g., n.sp. One specimen; obtained also at Stations 156, 157, and 298.
- Holothuria thomsoni*, n.sp., var. *hyalina*, nov. One injured specimen; the species obtained also at Stations 237 and 244, 1875 and 2900 fathoms.

NEMERTEA (Hubrecht, Zool. pt. 54).

- Pelagonemertes rollestoni*, Moseley, n.g., n.sp. One specimen; obtained also at Station 236, 775 to 420 fathoms. Only species of the genus.

STATION 158.

ANNELIDA (M'Intosh, Zool. pt. 34).

Hyalinæcia benthaliana, n.sp. One specimen; obtained also at Station 168, 1100 fathoms.

Grubianella antarctica, n.g., n.sp., var. (?). One specimen; obtained also at Stations 156 and 157.

AMPHIPODA (Stebbing, Zool. pt. 67).

Lanceola australis, n.sp. One specimen; obtained at no other locality.

Phronima novæ-zealandiæ, Powell (?). One specimen; obtained at no other locality by the Challenger. Recorded from New Zealand.

ISOPODA (Beddard, Zool. pt. 48).

Ischnosoma bacillus, n.sp. One fragmentary specimen; obtained at no other locality.

Eurycope fragilis, n.sp. One specimen; obtained also at Stations 147, 152, and 237.

Acanthocope spinicauda, n.g., n.sp. One specimen; obtained at no other locality. The only other species of the genus (*Acanthocope acutispina*) was taken at Station 302.

SCHIZOPODA (Sars, Zool. pt. 37).

Chalaraspis alata, Willemoes-Suhm, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

Eucopia australis, Dana. Several specimens; for distribution see Station 50.

Benthosiphonaria amblyops, n.g., n.sp. One specimen; obtained also at Stations 107 and 135. Only species of the genus.

Borcomysis scyphops, Sars. Obtained also at Stations 147 and 157.

ANOMURA (Henderson, Zool. pt. 69).

Manidopsis antonii (M.-Edwards, MS.). Two specimens; obtained also at Station 300, 1375 fathoms. Recorded from North Atlantic.

PYCNOGONIDA (Hoek, Zool. pt. 10).

Colossalcis gigas-leptorhynchus, n.sp. One specimen; obtained at no other locality.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Amusium meridionale, n.sp. Obtained also at Stations 146 and 302.

FISHES (Gunther, Zool. pt. 57).

Macrurus filicauda, n.sp. Two specimens; obtained also at Stations 146, 157, 299, 323, and 325.

Macrurus armatus, Hector. Eleven specimens; obtained also at Stations 146, 147, 157, 246, and 271. STATION 158.

Gonostoma microdon, n.sp. Two specimens; for distribution see Station 23.

Stomias boa (Risso). One specimen; obtained at no other locality by the Challenger. Recorded from Pacific and Mediterranean.

Nearly all the specimens of *Macrurus* had their air-bladders distended and protruding from the mouth.

In addition to the foregoing, the following are recorded in the Station-book:—Another Sponge, *Peltogaster* (in pouch of *Hymenaster*), another species of Anomura (*Galathea*?), Caridid and Peneid shrimps, and Cephalopod.

Excluding Protozoa, about 70 specimens of invertebrates and fishes were obtained at this Station, belonging to about 45 species, of which 33 are new to science, including representatives of 13 new genera; 16 of the new species and 3 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "In the breeding cavity of a *Hymenaster* was a parasitical Rhizocephalid, showing a large sucker and a flat body filled with eggs. I could not find an anus, and am not quite sure to what genus it should be referred, but I think it is most nearly allied to *Clistosaccus*, Liljeborg, the only Rhizocephalid in which there is no anus. According to Gerstaecker, Peltogastridæ have only been found in the abdomen of Decapoda, so that this specimen may probably have been detached and fallen into the open breeding cavity of the *Hymenaster*. Among the Schizopods were: a female of *Petalophthalmus inermis* [= *Boreomysis scyphops*], a new species of *Thysanopoda*, a genus of Euphausiidae distinguished by the presence of all the pereopoda, the last of which are rather small and rudimentary, and by eight pairs of lateral accessory eyes; only small species (32 mm. in length) were hitherto known from the surface of the Atlantic, but this species from the deep sea is much larger (50 mm. in length), is not in the least transparent, but of the ordinary consistency of the red deep-sea shrimps. It presents all the characters of *Euphausia*, but whether the lateral eyes are present is not yet quite certain. There were several specimens of *Chalaraspis ungnifera* [= *Eucopia australis*], a Schizopod common in the deep sea, and a specimen of *Chalaraspidum*, n.gen., characterised by shorter legs and a much longer carapace, which extends over the third abdominal segment and is extremely soft. An Isopod of the family Munopsidae seems to be very characteristic of the deep sea in the Antarctic, as it was taken in nearly every haul since we left the Cape; a blind specimen was taken to-day with all its legs entire but with broken antennæ. There were two species of *Galathea*, a Caridid Decapod belonging to a species not hitherto taken, and a Peneid which we have often caught in the deep sea."

STATION 145.
ORGANISMS FROM
THE DEPOSIT.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.); the pelagic species, which make up about 88 per cent. of the carbonate of lime present in the deposit, are marked thus × :—

Buccellina depressa, d'Orbigny.
Miliolina australiana (d'Orbigny).
 " *costata* (Karrer).
Astrorhiza sp. (?).
Palmella *Lara fusca*, Schulze.
Hyperammina ramosa, Brady.
Rhizommina algaformis, Brady.
Rosellina scapularis, Montfort.
Haedylargium globigeriniforme (Parker and Jones).
 " *turbinatum*, Brady.
Hammonda carpenteri, Brady.
Wollastonia clausi, Jones and Parker.
Gastropoda pupales, d'Orbigny.
Chamberlainia communis, d'Orbigny.
Camelina subglobosa, Brady.
Eponidina serrata, Reuss.
Lagena marginata (Walker and Boys).

Lagena truncata, Brady.
Nodosaria sp. (?).
Polymorphina cuspidata, Brady.
 " *lanceolata*, Reuss.
 " *sororia*, Reuss, var.
Uvigerina asperula, Czjzek.
 × *Globigerina bulloides*, d'Orbigny.
 × " *inflata*, d'Orbigny.
 × *Orbulina universa*, d'Orbigny.
Pullenia sphaeroides (d'Orbigny).
Sphaeroidina bulloides, d'Orbigny.
Truncatulina tenera, Brady.
 " *ungariana* (d'Orbigny).
 × *Pulvinulina crassa* (d'Orbigny).
 × " *melchioriana* (d'Orbigny).
 × " *patagonica* (d'Orbigny).
Rotalia soldanii, d'Orbigny.
Nonionina pompilioides (Fichtel and Moll).

ORGANISMS FROM
SURFACE NETS.

Surface Organisms.—The following species are recorded from the surface at this Station :—

OSTRACODA (Brady, Zool. pt. 3).
Halocypris atlantica, Lubbock.
 COPEPODA (Brady, Zool. pt. 23).
Etudius armatus, n.g., n.sp.
Heterochaeta spinifrons, Claus.

AMPHIPODA (Stebbing, Zool. pt. 67).
Euthemisto thomsoni, Stebbing.
 PTEROPODA (Pelseneer, Zool. pt. 58).
Spongiobranchæa australis,
 d'Orbigny.

In addition, the following are recorded in the note-books :—A very few Diatoms, *Globigerina*, *Orbulina*, Medusæ, a fine Nemertean [*Pelagonemertes rollestoni*, Moseley] which, though taken in the trawl, is evidently a pelagic animal, but probably lives in moderately deep water, *Sagitta*, *Cypridina*, great quantities of the Antarctic Copepods, large *Hyperia*, *Primno*, *Phronima*, and small shells of *Spirialis* [= *Limacina*].

Some of the surface animals taken to-day indicate that we have entered the warm Indian current, e.g., a *Phronima*, a large transparent Nemertean with Dendrocoelous characters, which was two inches in length and showed well the intestine, nervous system, and ovary, as well as several species of pelagic Foraminifera.

Station 159 (Sounding 263), Termination Land to Melbourne (see Chart 24 and Diagram 10). STATION 159.

March 10, 1874; lat. 47° 25' S., long. 130° 22' E.

Temperature of air at noon, 51°·3; mean for the day, 51°·2.

Temperature of water :—

Surface, ...	51°·5	800 fathoms, ...	38°·3
50 fathoms, ...	50°·0	900 "	37°·9
100 "	49°·0	1000 "	37°·7
150 "	48°·1	1100 "	37°·5
200 "	47°·4	1200 "	37°·3
300 "	47°·2	1300 "	37°·1
400 "	46°·9	1400 "	36°·9
500 "	44°·8	1500 "	36°·7
600 "	41°·8	Bottom, ...	34°·5
700 "	39°·4		

Density at 60° F. at surface, 1·02566; bottom, 1·02564.

Depth, 2150 fathoms; deposit, Globigerina Ooze, containing 87·90 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 8 A.M. shortened sail and put over trawl. At 9.15 A.M. furled sails, brought ship to wind, and sounded in 2150 fathoms. At noon obtained a series of temperatures down to 1500 fathoms. The carbonic acid was determined in bottom water, and amounted to 52·6 milligrammes per litre. At 2 P.M. commenced heaving in trawl, which came up at 4 P.M. nearly empty, having probably been very near, but never reached, the bottom, as it contained no certain inhabitant of the bottom, nor any ooze. At 4.30 P.M. made sail. The following birds were observed about the ship in this locality :—*Diomedea exulans*, *Diomedea fulminata*, molly mawks, mutton birds, petrels, and some small light-coloured birds flying over the sea at a distance.

Distance at noon from Cape Otway, 780 miles. Made good 56 miles.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

ANIMALS FROM
TRAWL.

DEEP-SEA MEDUSÆ (Haeckel, Zool. pt. 12)

Æginura myosura, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

MACRURA (Spence Bate, Zool. pt. 52).

Gennadas parvus, n.g., n.sp. One specimen; for distribution see Station 45.

Petalidium foliaceum, n.g., n.sp. One specimen; obtained also at Station 146. Only species of the genus.

STATION 152.

Sergestes atlanticus, M.-Edwards. Three specimens; widely distributed.

Acanthephyra sica, n.sp. Two specimens; for distribution see Station 40.

Hymenodora glauca, n.sp. One specimen; obtained also at Station 215, 2550 fathoms.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Toonius sukmi (Lankester), n.sp. Two specimens (surface?); obtained also at the surface between Australia and New Zealand, and North Atlantic, off coast of Africa.

TUNICATA (Herdman, Zool. pt. 76).

Pyrosoma giganteum, Lesueur. Six specimens (probably from near the surface).

FISHES (Gunther, Zool. pt. 57).

Sternoptyx diaphana (Herm.). One specimen (probably from near the surface); for distribution see Station 101.

Opistomias micripnus, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

Excluding Protozoa, about 20 specimens of invertebrates and fishes were obtained at this Station, belonging to 10 species, of which 7 are new to science, including representatives of 4 new genera; 2 of the new species and 2 new genera were not obtained elsewhere.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—As the trawl at this Station probably never touched the bottom, most of the species in the foregoing list may have come from surface or intermediate waters, although some of them appear to have lived close to the bottom. In addition, the following species are recorded from the surface in the vicinity:—

RADIOLARIA (Haeckel, Zool. pt. 40).

Spharocapsa quadrata, Haeckel.

Coleopsis occulta, Haeckel.

Plagiodium quadrigemimum, Haeckel.

Aulodendron antarcticum, Haeckel.

Rhincalanus gigas, n.sp.

Euchata prestandrea, Philippi.

Leuckartia flavicornis, Claus (?).

Pleuromma abdominale (Lubbock).

OSTRACODA (Brady, Zool. pt. 3).

Halocypris atlantica, Lubbock.

„ *brevirostris*, Dana.

AMPHIPODA (Stebbing, Zool. pt. 67).

Primno menevillei, n.sp.

COPEPODA (Brady, Zool. pt. 23).

Calanus propinquus, n.sp.

Eucalanus attenuatus (Dana).

PTEROPODA (Pelseneer, Zool. pt. 65).

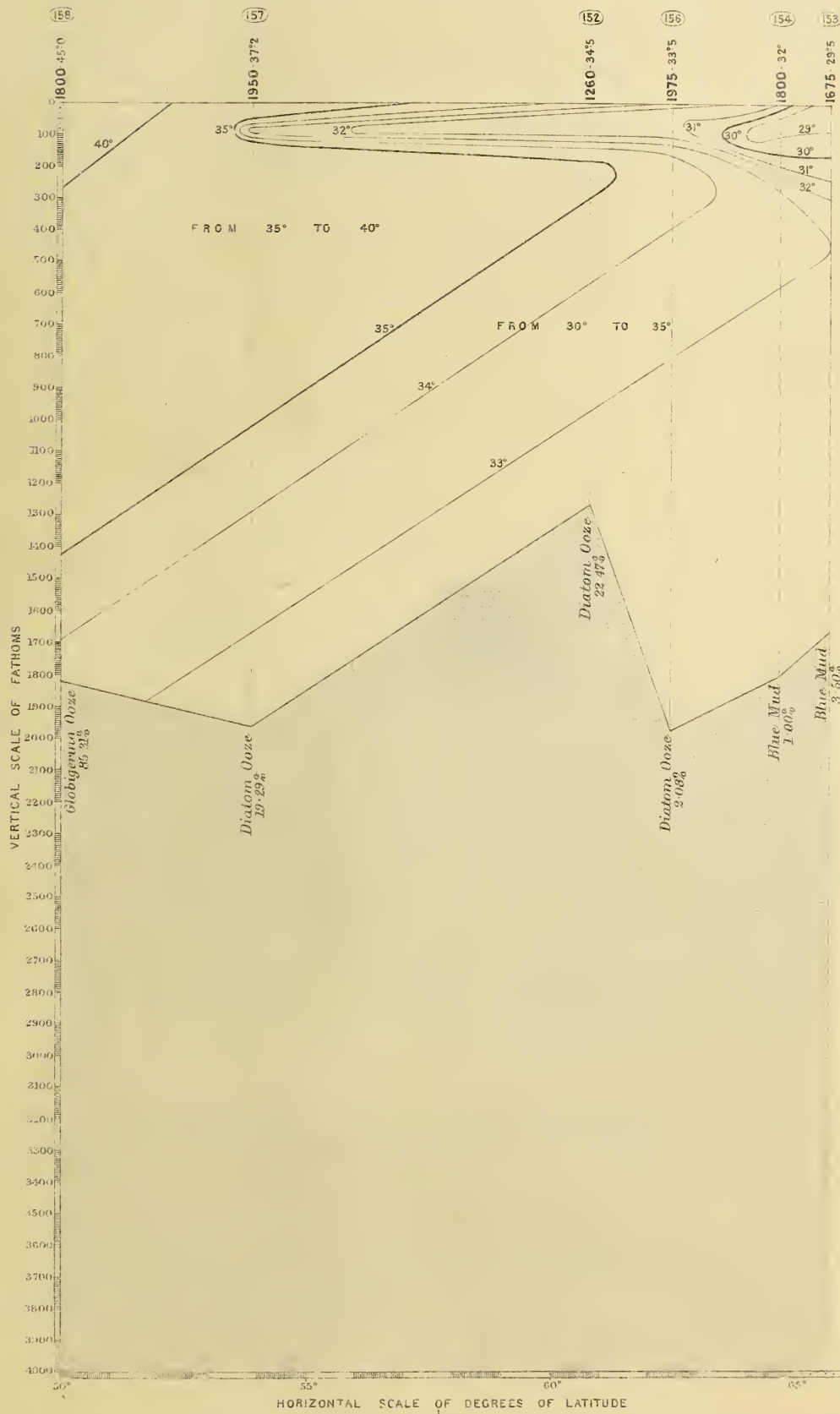
Clio australis (d'Orbigny).

TUNICATA (Herdman, Zool. pt. 76).

Salpa africana-maxima, Forskåhl.

SOUTHERN INDIAN OCEAN
Meridional Temperature Section
Between the Parallels of 50° and 65° South Lat.

For explanation of Symbols see Appendix I.





In addition, the following are recorded in the note-books (March 9 and 10):—, STATION 159. Foraminifera, *Diphyes*, Physophorid, *Apolesia* (?), *Sagitta*, *Cypridina*, Nauplii of a Cirriped (*Archizoëa gigas*, Dohrn), *Hyperia*, *Phronima* with house and young, *Primno macropa*, *Euphausia*, *Sergestes*, Zoëæ, *Atlanta*, and *Appendicularia*.

Willemoes-Suhm writes: "The warm-water animals were in greater number on the surface; there were five specimens of *Pyrosoma*, nearly every one of which had eggs but no embryos. There was a Nauplius with a carapace like the cap of a Madeira peasant with many spines, 3 mm. in length; it belongs to *Euphausia*, of which Metschnikoff has figured a similar larva (*Zeitschr. f. wiss. Zool.*, Bd. xxi. p. 396, pl. xxxiv., 1871), but not with such a striking form. There were many adult *Euphausiæ* on the surface. *Phronima* was taken with its house; Claus has shown that the house is a young *Pyrosoma* in which *Phronima* establishes itself in order to feed on the Tunicata. He has found all stages, from the *Pyrosoma* just recently attacked by the Amphipod to those soft remains in which it has been taken by us. Preparations made by us show that the tissues of these houses have the same histological structure as *Pyrosomata* when treated in the same manner. *Sergestes*, which we have not taken since leaving the Cape, was present at the surface. A little Amphipod, always taken on the surface during our Antarctic cruise, I find now to be *Primno macropa*, which was discovered by Guérin-Ménéville near Chili, and which appears to be circumpolar. There were two beautifully transparent Cephalopoda apparently belonging to the genus *Loligopsis*."

Moseley writes: "The surface fauna is changing; on the night of the 9th the sea was full of *Pyrosomæ*, and the wake of the ship lighted up with them. Moreover, several pieces of *Durvillea* have been met with, and one piece covered with barnacles caught on the log; hitherto the sea has been remarkably free from floating weed. This *Durvillea* probably came from St. Paul's and Amsterdam Islands, since these islands lie in the direct course of the South Indian connecting current which, sweeping almost directly eastwards, joins the South Australian current. On the night of the 10th *Pyrosoma* was again abundant. On the evening of the 11th there were no *Pyrosomæ* at the surface, but a slight scintillating phosphorescence from the Copepods, and I saw a piece of *Durvillea* float past. *Phronima*, while in its house with its young, moves the whole about by protruding its tail from the end and working it."

Station 160 (Sounding 264), Termination Land to Melbourne (see Chart 24 and Diagram 10). STATION 160.

March 13, 1874; lat. 42° 42' S., long. 134° 10' E.

Temperature of air at noon, 52°·0; mean for the day, 51°·6.

(SUMMARY OF RESULTS CHALL. EXP.—1893.)

STATION 140.

Temperature of water :—

Surface, ...	55.0	450 fathoms, ...	43.3
50 fathoms, ...	51.8	500 „	41.6
100 „	48.5	600 „	38.5
150 „	47.9	700 „	37.0
200 „	47.7	800 „	36.8
250 „	47.5	900 „	36.6
300 „	47.2	1000 „	36.4
350 „	46.5	Bottom, ...	33.9
400 „	44.9		

Density at 60° F.:—

Surface, ...	1.02570	300 fathoms, ...	1.02560
50 fathoms, ...	1.02576	400 „	1.02557
100 „	1.02565	Bottom, ...	1.02570
200 „	1.02573		

Depth, 2600 fathoms; deposit, Red Clay, containing 18.56 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6.10 A.M. shortened and furled sails, put over trawl, and veered 2500 fathoms. At 8 A.M. brought ship to wind, and proceeded under steam to sound. Sounded in 2600 fathoms; veered trawl-rope to 3450 fathoms. About half a litre of Red Clay came up in the sounding-tube. At noon obtained temperatures down to 1000 fathoms. The carbonic acid was determined in the bottom water, and amounted to 53.7 milligrammes per litre. At 2.30 P.M. commenced heaving in trawl, which came up at 5.30 P.M. with the net much torn, but containing numerous specimens, a quantity of Red Clay, with many manganese nodules, ear-bones of Cetaceans, and sharks' teeth. To the nodules were attached Cirripeds, *Antipathes*, *Terebratula*, and Tunicata. Observed albatrosses, molly mawks, night hawks, and mutton birds. At 6 P.M. made all plain sail.

Distance at noon from Cape Otway, 488 miles. Made good 149 miles. Amount of current 13 miles, direction N. 57° E.

SPECIES FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Holascus fibulatus, n.g., n.sp. One specimen; obtained also at Stations 146 and 147.

ANTIPATHARIA (Brook, Zool. pt. 80).

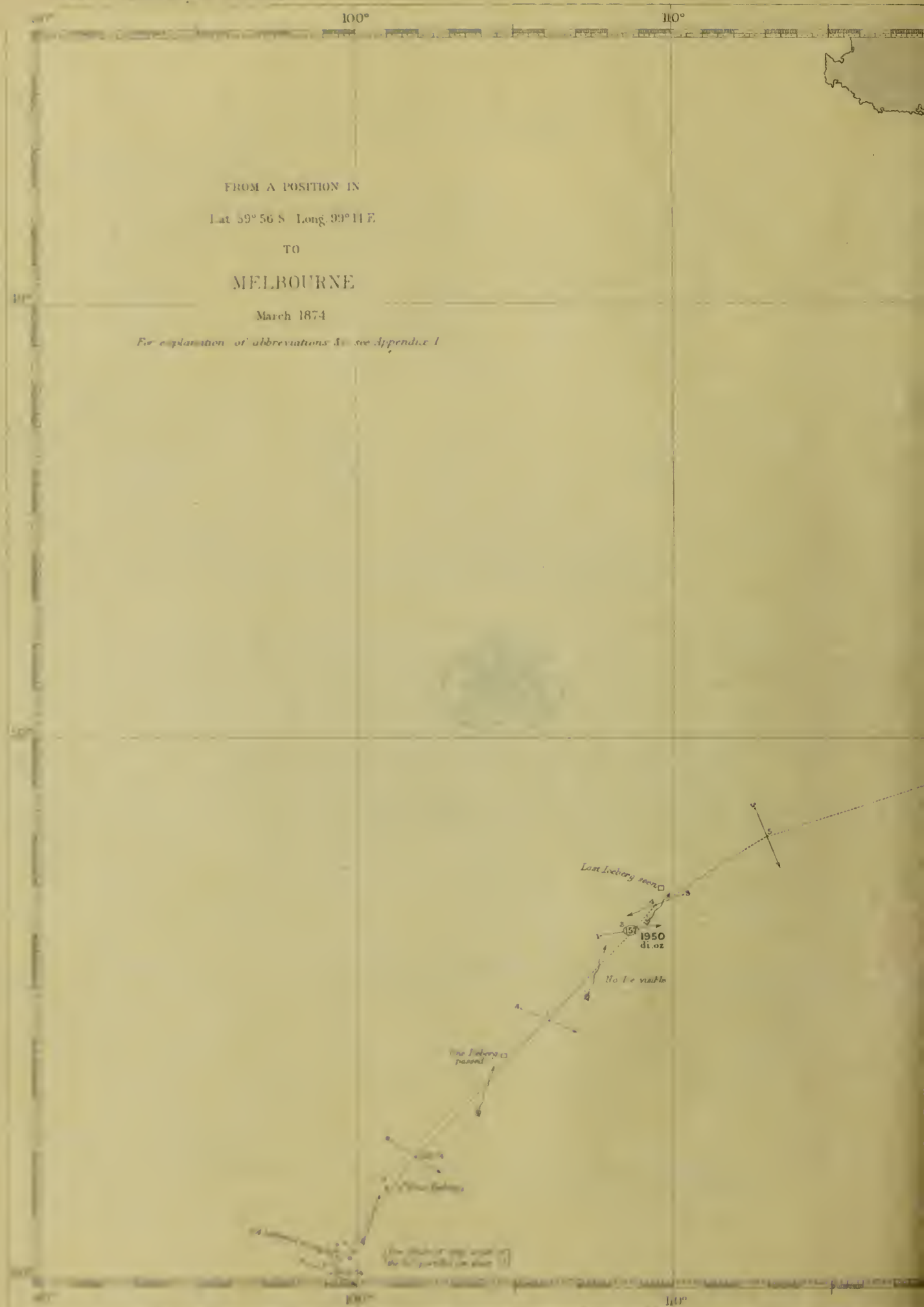
Bathypathes tenuis, n.g., n.sp. Several specimens; obtained at no other locality.

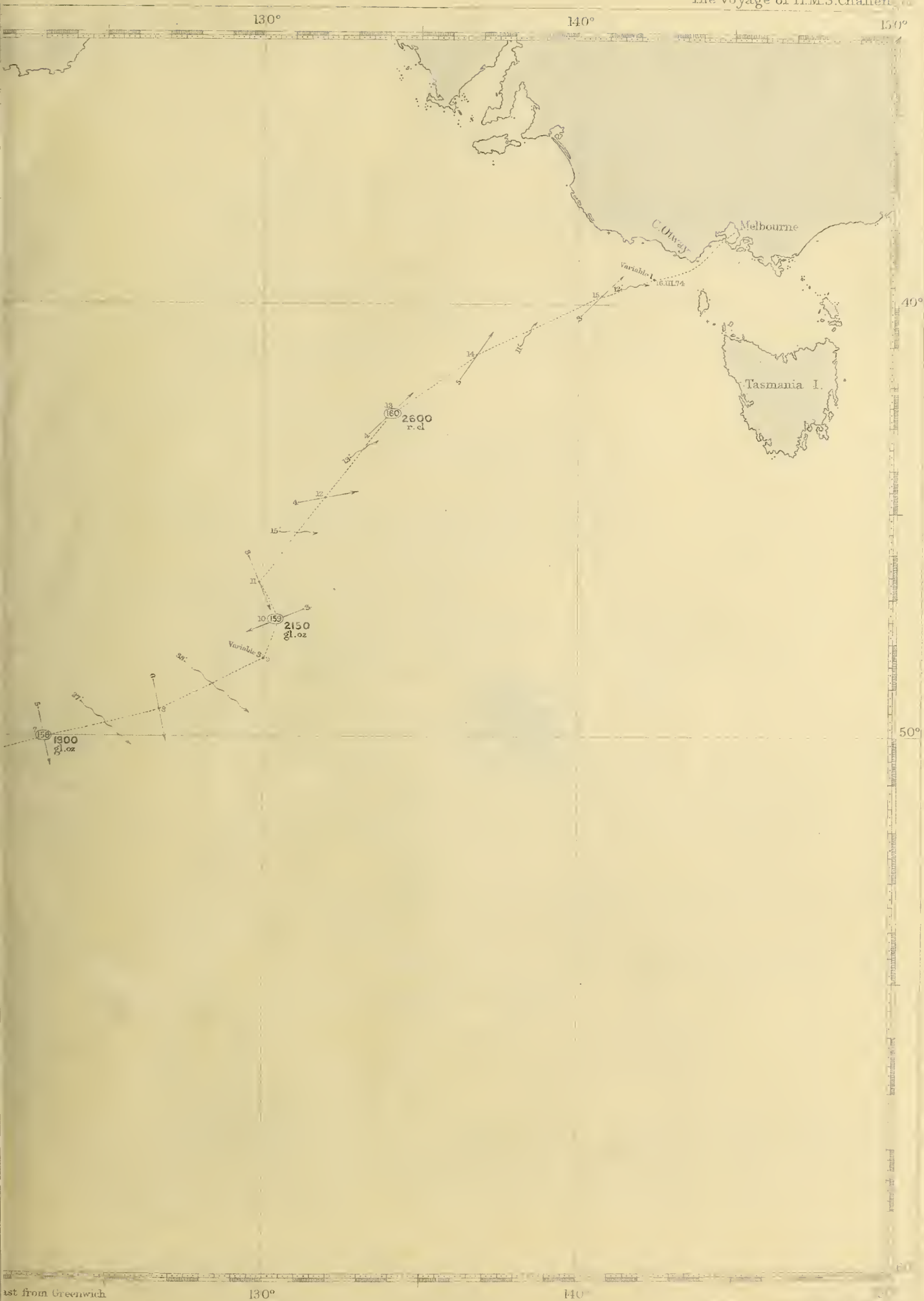
Summary of Results.

FROM A POSITION IN
Lat 59° 56' S Long. 99° 14' E.
TO
MELBOURNE

March 1874

For explanation of abbreviations see Appendix I







ACTINIARIA (Hertwig, Zool. pt. 15).

STATION 160.

Porponia elongata, n.g., n.sp. Two specimens; obtained at no other locality.

HYDROIDA (Allman, Zool. pt. 70).

Halisiphonia megalotheca, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Cryptolaria abyssicola, n.sp. One specimen; obtained at no other locality.

CRINOIDEA (Carpenter, Zool. pt. 60).

Antedon abyssicola, n.sp. One specimen; obtained also at Station 244,
2900 fathoms.

ASTEROIDEA (Sladen, Zool. pt. 51).

Brisinga discincta, n.sp. Fragments; obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha loveni, n.sp. Obtained also at Stations 146, 147, 157, and 158 (?).

„ *lacazei*, n.sp. Obtained also at Station 299, 2160 fathoms.

Ophiocten pallidum, n.sp. Obtained also at Station 156.

HOLOTHURIOIDEA (Théel, Zool. pt. 13).

Elpidia glacialis, Théel. One specimen; obtained at no other locality by the
Challenger. Recorded from North Atlantic and Kara Sea.

Scotoplanes mollis, n.g., n.sp. One specimen; obtained at no other locality.

Peniagone atrox, n.g., n.sp. One injured specimen; obtained at no other
locality.

Scotoanassa diaphana, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Onciophanta mutabilis, n.g., n.sp. Several specimens; obtained also at
Stations 146, 157, 241, 244, 281, 299, and 325. Only
species of the genus.

Benthodytes sanguinolenta, n.g., n.sp., var. *marginata*, nov. Four injured
specimens; obtained also at Station 158.

ANNELIDA (M'Intosh, Zool. pt. 34).

Eunoa abyssorum, n.sp. One injured specimen; obtained at no other locality.

Polynoë (?) ascidioides, n.sp. One injured specimen (from branchial sac of an
Ascidian); obtained at no other locality.

STATION 160.

OSTRACODA (Brady, Zool. pt. 3).

Cytheropteron abyssorum, n.sp. Obtained at no other locality.

CIRRIPIEDIA (Hoek, Zool. pt. 25).

Scalpellum planum, n.sp. One specimen; obtained at no other locality.

SCAPHOPODA (Watson, Zool. pt. 42).

Dentalium leptoskeles, n.sp. Several specimens; obtained also at Station 157.

POLYZOA (Busk, Zool. pt. 30).

Cellepora solida, n.sp. Obtained at no other locality.

BRACHIOPODA (Davidson, Zool. pt. 1).

Terebratulina wyvillii, n.sp. Several specimens; obtained also at Stations 184, 244, 299, 302, and 317, 1035 to 2900 fathoms.

TUNICATA (Herdman, Zool. pts. 17 and 76).

Styela bythia, n.sp. One specimen; obtained at no other locality.

„ *squamosa*, n.sp. One specimen; obtained at no other locality.

Abyssascidia wyvillii, n.g., n.sp. One specimen; obtained at no other locality.
The only other species of the genus (*Abyssascidia vasculosa*) was taken at Station 157.

Pyrosoma sp. (?) (*giganteum* ?). One specimen and fragments (dead and decayed).

In addition to the foregoing, the following are recorded in the Station-book:—Small *Umbellula*, fragments of *Pourtalesia*, and a broken *Lamellibranch*.

Excluding Protozoa, about 50 specimens of invertebrates were obtained at this Station, belonging to about 30 species, of which 25 are new to science, including representatives of 10 new genera; 16 of the new species and 2 new genera were not obtained elsewhere.

Moseley writes: "Numerous *Antipatharia* were attached to the manganese nodules, thus showing that they do not lie deeply embedded in the mud."

Willemoes-Suhm writes: "In to-day's deep-sea trawling there was one small *Aphroditactan*, and no *Crustacea* except a *Scalpellum*. If the red *Peneids* lived in intermediate waters we should surely have taken some to-day. The genera represented: *Umbellula*, *Antipathes*, *Ophioglypha*, *Brisinga*, *Scalpellum*, and *Dentalium* (perhaps also the species), are those got all through the cruise in deep water."

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.); the pelagic species, which make up about 65 per cent. of the carbonate of lime present in the deposit, are marked thus × :—

STATION 160.
ORGANISMS FROM
THE DEPOSIT.

<i>Biloculina depressa</i> , d'Orbigny.	<i>Lagena fimbriata</i> , Brady.
" " var. <i>murrhyna</i> , Schwager.	" <i>formosa</i> , Schwager.
<i>Spiroloculina planulata</i> (Lamarck).	" <i>globosa</i> (Montagu).
" <i>tenuis</i> (Czjzek).	" <i>gracilis</i> , Williamson.
<i>Miliolina venusta</i> (Karrer).	" <i>gracillima</i> (Seguenza).
<i>Psanmosphæra fusca</i> , Schulze.	" <i>hertwigiana</i> , Brady.
<i>Jaculella obtusa</i> , Brady.	" <i>lævigata</i> (Reuss).
<i>Hyperammina ramosa</i> , Brady.	" <i>lævis</i> (Montagu).
<i>Aschemonella ramuliformis</i> , Brady.	" <i>longispina</i> , Brady.
<i>Rhizammina algæformis</i> , Brady.	" <i>marginata</i> (Walker and Boys).
<i>Reophax adunca</i> , Brady.	" <i>quadralata</i> , Brady.
" <i>dentaliniformis</i> , Brady.	" <i>staphyllearia</i> , Schwager.
" <i>diffugiformis</i> , Brady.	" <i>stelligera</i> , Brady.
" <i>distans</i> , Brady.	" <i>striata</i> (d'Orbigny).
" <i>guthifera</i> , Brady.	" <i>sulcata</i> (Walker and Jacob).
" <i>pilulifera</i> , Brady.	<i>Nodosaria communis</i> , d'Orbigny.
" <i>scorpiurus</i> , Montfort.	" <i>roemeri</i> (Neugeboren).
<i>Haplophragmium agglutinans</i> (d'Orbigny).	<i>Uvigerina aculeata</i> , d'Orbigny.
" <i>foliaceum</i> , Brady.	" <i>asperula</i> , Czjzek.
" <i>globigeriniforme</i> (Parker and Jones).	" <i>pygmæa</i> , d'Orbigny.
" <i>latidorsatum</i> (Bornemann).	× <i>Globigerina bulloides</i> , d'Orbigny.
" <i>turbinatum</i> , Brady.	× " <i>inflata</i> , d'Orbigny.
<i>Thurammina papillata</i> , Brady.	× <i>Orbulina universa</i> , d'Orbigny.
<i>Hormosina ovicula</i> , Brady.	× <i>Pullenia obliquiloculata</i> , Parker and Jones
<i>Trochammina galeata</i> , Brady.	" <i>quinqueloba</i> , Reuss.
" <i>lituiformis</i> , Brady.	" <i>sphæroides</i> (d'Orbigny).
" <i>trullissata</i> , Brady.	<i>Sphæroidina bulloides</i> , d'Orbigny.
<i>Textularia concava</i> (Karrer).	<i>Truncatulina alneriana</i> (d'Orbigny) (?).
<i>Verneuilina pygmæa</i> (Egger).	" <i>haidingerii</i> (d'Orbigny) (?).
<i>Gaudryina pupoides</i> , d'Orbigny.	" <i>pygmæa</i> , Hantken.
<i>Clavulina communis</i> , d'Orbigny.	" <i>ungeriana</i> (d'Orbigny).
<i>Virgulina schreiberstana</i> , Czjzek.	" <i>wuellerstorfi</i> (Schwager).
" <i>squamosa</i> , d'Orbigny.	× <i>Pulvinulina crassa</i> (d'Orbigny).
" <i>subdepressa</i> , Brady.	" <i>exigua</i> , Brady.
<i>Cassidulina subglobosa</i> , Brady.	× " <i>melchioriana</i> (d'Orbigny).
<i>Lagena acuticosta</i> , Reuss.	<i>Rotalia orbicularis</i> , d'Orbigny.
" <i>alveolata</i> , Brady.	<i>Nonionina depressula</i> (Walker and Jacob).
" <i>exsculpta</i> , Brady.	" <i>umbilicatula</i> (Montagu).
	<i>Polystomella striatopunctata</i> (Fichtel and Moll).

Surface Organisms.—The following species are recorded from the surface in the vicinity of this Station :—

ORGANISMS FROM
SURFACE-NETS.

STATION 100.

RADIOLARIA (Haeckel, Zool. pt. 40).

Sphaerocorum circumtextum, Haeckel.*Hexaplagia australis*, Haeckel.*Theophana nonaria*, Haeckel.

AMPHIRODA (Stebbing, Zool. pt. 67).

Parapronoë clausi, n.sp.

MACRURA (Spence Bate, Zool. pt. 52).

Sergestes dorsispinalis, n.sp.,, *laterodentatus*, n.sp.

In addition, the following are recorded in the note-books from the surface and down to a depth of 50 fathoms (March 15 and 16):—*Cuboides*, *Diphyes*, *Physalia*, *Sagitta*, *Alciopa*, *Cypridina*, small species of *Saphirina* of a beautiful blue colour, *Hyalophyllum* [= *Saphirinella*], other small Copepods, *Hyperia*, larvæ of *Euphausia* and higher Decapoda, *Styliola*, *Cleodora* [= *Clio*], *Atlanta*, small fishes of two or three species, and the body of a Cimicid Hemipter (not *Cimex lectularia*). *Physalia*, *Saphirina*, and *Saphirinella*, were observed for the first time after leaving the Cape.

Willemoes-Suhm writes: "Besides *Sergestes*, which after *Phronima* was one of the first warm-water animals met with, there was also the Saphirimid *Hyalophyllum pellucidum* [= *Saphirinella styliifera*], a species found in the Atlantic. *Styliola* and *Atlanta* became more abundant. The presence of a Hemipterous insect on the surface indicated the neighbourhood of land, and many large Medusæ were floating past the ship. A small species of *Saphirina* of a metallic dark blue colour (a species not observed in the Atlantic) was very common."

AT MELBOURNE.

The expedition remained at Melbourne from 2 p.m. on March 17 till 6 a.m. on April 1, 1874, refitting the ship and obtaining magnetic and other observations on shore.

C. PACIFIC OCEAN.

STATION 161

Station 161 (Sounding 265), Melbourne to Sydney (see Chart 25).

April 1, 1874; lat. 33° 22' 30" S., long. 144° 36' 30" E.

Temperature of air at noon, 66°·3; mean for the day, 64°·4.

Temperature of water at surface, 63°·5.

Density at 60° F. at surface, 1·02568.

Depth, 33 fathoms; deposit, Shelly Sand, containing 82·22 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 4 a.m. got up steam. At 6 a.m. weighed anchor and proceeded out of Hobson's Bay. At 7 a.m. passed Gellibrand Lighthouse, and shaped course for the South Channel. At 9.40 a.m. made all plain sail. Proceeded under steam. At noon, rounded Inner Fairway Bay of the South Channel. At 2 p.m. passed Port Philip Heads and shaped

course S. At 3 P.M. sounded and trawled in 33 fathoms, off the entrance to Port Philip. At 3.20 P.M. hove up trawl and proceeded. At 4 P.M. stopped and trawled. At 4.30 P.M. hove up trawl and proceeded. At 5 P.M. stopped and trawled. At 5.30 P.M. hove up trawl and proceeded. The three trawlings, in depths varying from 33 to 50 fathoms, brought up numerous specimens. Towards midnight the wind fell to a calm.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

ANIMALS FROM
TRAWL.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Anthastra parvispicula, n.g., n.sp. Obtained at no other locality.

HYDROIDA (Allman, Zool. pt. 20).

Azygoplون rostratum, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

ASTEROIDEA (Sladen, Zool. pt. 51).

Astropecten pectinatus, n.sp. Obtained also at Station 162 and Port Jackson, 6 to 40 fathoms.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha kinbergi, Ljungman. Obtained also at Stations 162, 188, and Port Jackson, 2 to 38 fathoms.

Ophiothrix aristulata, n.sp., var. (?). Obtained also at Stations 142 and 163.

Ophiobyrsa rudis, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Ophiomyxa australis, Lütken. For distribution see Station 109.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Goniocidaris tubaria (Lamarek). Obtained also at Station 162, 38 to 40 fathoms.

Microcyphus zigzag, Agassiz. Obtained also at Station 162, 38 to 40 fathoms.

Echinanthus testudinarius, Gray. Obtained also at Station 163, 120 fathoms.

OSTRACODA (Brady, Zool. pt. 3).

Philomedes wyville-thomsoni, n.sp. One specimen; obtained at no other locality.

AMPHIPODA (Stebbing, Zool. pt. 67).

Hippomedon geelongi, n.sp. One specimen; obtained at no other locality.

Amaryllis bathycephalus, n.sp. One specimen; obtained at no other locality.

STATION 161.

- Syrrhoë semiserrata*, n.sp. One specimen; obtained at no other locality.
- Atylus homochir*, Haswell. Several specimens; obtained at no other locality by the Challenger.
- Atyloides serraticauda*, n.g., n.sp. Two specimens; obtained at no other locality.
- Eusiroides casaris*, n.g., n.sp. Two specimens; obtained at no other locality.
- Elasmopus subcarinata* (Haswell). Two specimens; obtained also at Station 168 and Port Jackson, 30 to 1100 fathoms. Recorded from Australia and New Zealand.
- Photis brevicaudata*, n.sp. One specimen; obtained at no other locality.
- Dryopoides westwoodi*, n.g., n.sp. Two specimens; obtained at no other locality.
- Only species of the genus.
- Icilius danaë*, n.sp. One specimen; obtained at no other locality.

ISOPODA (Beddard, Zool. pts. 33 and 48).

- Scrolis tuberculata*, Grube. One specimen; obtained also at Station 162, 38 to 40 fathoms.
- „ *longicaudata*, n.sp. One specimen; obtained at no other locality.
- „ *minuta*, n.sp. One specimen; obtained at no other locality.
- Arcturus oculatus*, n.sp. Five specimens; obtained at no other locality.
- „ sp. (?). One specimen, species undetermined.
- Ceratocephalus grayanus*, White, MS. Three specimens; obtained also at Station 163B, 30 to 35 fathoms. Recorded from Bass Strait.
- Seven other specimens, genera and species undetermined.

CUMACEA (Sars, Zool. pt. 55).

- Cyclaspis australis*, n.sp. Several specimens; obtained at no other locality.

SCHIZOPODA (Sars, Zool. pt. 37).

- Pseudomma australe*, n.sp. One fragmentary specimen; obtained at no other locality.
- Anchiobus angustus*, n.sp. Three specimens; obtained at no other locality.
- Myridopsis incisa*, n.sp. One injured specimen; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

- Eupagurus lacertosus*, n.sp., var. *nana*, nov. Several specimens (in shells of *Nassa*, *Turritella*, and *Natica*); obtained also at Stations 162 and 163B, 38 and 35 fathoms. The species was taken at Station 166, 275 fathoms.

BRACHYURA (Miers, Zool. pt. 49).

STATION 161.

Achæus tenuicollis, n.sp. Two specimens; obtained also at Station 162, 38 fathoms.

Pilumnus tomentosus, Latreille (?). One specimen; obtained also at Station 162, 38 fathoms. Recorded from Australia.

Portunus corrugatus (Pennant). Four specimens; obtained also at Stations 75, 162, and Cape Verdes.

Halicarcinus ovatus, Stimpson. Two specimens; obtained also at Port Jackson (?), 2 to 10 fathoms. Recorded from Australia.

Ebalia (Phlyxia) intermedia, n.sp. Four specimens; obtained at no other locality.

PYCNOGONIDA (Hoek, Zool. pt. 35).

Ascorhynchus minutus, n.sp. Two specimens; obtained at no other locality.

Pallene languida, n.sp. One specimen; obtained at no other locality.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Cardium (Bucardium) pulchellum, Gray. Obtained also at Station 162 and Port Jackson, 2 to 40 fathoms. Recorded from New Zealand.

Leda crassa (Hinds). Single valve; obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.

„ *ensicula*, Angas. Obtained at no other locality by the Challenger. Recorded from Port Jackson.

GASTEROPODA (Watson, Zool. pt. 42).

Trochus (Euchelus) dunkeri, Koch. One specimen; obtained at no other locality by the Challenger. Recorded from Port Adelaide.

„ (*Solariella*) *philippensis*, n.sp. Obtained at no other locality.

Typhis philippensis, n.sp. Obtained at no other locality.

Nassa (Niotha) pauperata (Lamarck). Obtained also at Station 162 and Port Jackson, 2 to 40 fathoms. Recorded from Australia and Tasmania.

Natica effossa, n.sp. Obtained also at Port Jackson, 30 to 35 fathoms.

Turritella philippensis, n.sp. Obtained at no other locality.

POLYZOA (Busk, Zool. pts. 30 and 50; Waters, pt. 79).

Ætea anguina (Linné). Obtained also at Stations 36, 135, 162, and 204.

Catenicella hastata, Busk. Obtained also at Stations 162 and 163A, 38 and 150 fathoms. Recorded from Australia and New Zealand.

„ *cribraria*, Busk. Obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.

STATION 161

Cellularia cuspidata, Busk. Obtained at no other locality by the Challenger.
Recorded from Australia and New Zealand.

Enema crystallina, Gray. Obtained at no other locality by the Challenger.
Recorded from Australia, New Zealand, Magellan Strait,
and Campbell's Island.

Cuberea rudis, Busk. Obtained at no other locality by the Challenger. Recorded
from Bass Strait.

Carbasia dissimilis, Busk. Obtained also at Stations 162, 163A, and 196, 38 to
825 fathoms. Recorded from Australia and Tasmania.

Retepora crassa, n.sp. Obtained also at Station 162, 38 fathoms. [Waters calls it
Retepora porcellana, MacGillivray].

„ *victoriensis*, n.sp. (?). Obtained also at Station 162 and Japan (var.
japonica), 8 to 50 fathoms. [Waters calls it *Retepora*
monilifera, MacGillivray, form *munita*, Hincks].

Mucronella pyriformis, n.sp. Obtained also at Station 162, 38 fathoms. [Waters
calls it *Bracebridgia geometrica* (Reuss)].

„ *simplicissima*, n.sp. (?). Obtained at no other locality.

Schizoporella cecilii (Audouin). Obtained at no other locality by the Challenger.

Cellepora bilabiata, n.sp. (?). Obtained at no other locality.

Lamularia capulus, Busk. Obtained at no other locality by the Challenger.
Recorded from Cape Capricorn.

Crisia acropora, Busk. Obtained at no other locality by the Challenger. Recorded
from Australia.

Hornera foliacea, MacGillivray. Obtained also at Port Jackson, 35 to 38 fathoms.
Recorded from Australia.

Amathia spiralis, Lamouroux. Obtained also at Stations 162 and 163A, 38 and
150 fathoms. Recorded from Australia.

In addition to the foregoing, the following are recorded in the Station-book:—
Alcyonium, Annelid, *Trigla*, and *Platessa*.

Excluding Protozoa, about 150 specimens of invertebrates and fishes were obtained
at this Station, belonging to about 71 species, of which 35 are new to science, including
representatives of 6 new genera; 27 of the new species and 3 new genera were not
obtained elsewhere.

Willmer-Salm writes: "Only one or two Annelid fragments came up. Polyzoa,
especially Ctenocollida and *Hornera*, came up in great quantities. Among the
Crustacea there were a very small specimen of *Mysis*, or a closely-allied genus, a *Cuma*,

a very slender form allied to *Anceus*, very small and insignificant *Serolis*, probably one of the northernmost representatives of this southern genus, an Ostracode, a peculiar Maiid, a small *Stenorhynchus*, and a *Nymphon*. The shell of a *Venus* was very remarkable." STATION 161.

Station 162 (Sounding 266), Melbourne to Sydney (see Chart 25).

STATION 162.

April 2, 1874; lat. $39^{\circ} 10' 30''$ S., long. $146^{\circ} 37'$ E.

Temperature of air at noon, $62^{\circ} 3$; mean for the day, $62^{\circ} 3$.

Temperature of water at surface, $63^{\circ} 2$.

Density at 60° F. at surface 1.02632.

Depth, 38 fathoms; deposit, Shelly Sand, containing 82.22 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

Under steam all night. At 5.30 A.M. observed land near Wilson's Promontory on the port bow. Altered course towards Rodondo Island. At 8.20 A.M. passed S. side of Rodondo Island, and altered course towards Moncœur Islands. At 9.20 A.M. passed within a mile (S. by E.) of W. Moncœur Island, and steered towards E. Moncœur Island. At 10 A.M. stopped near E. Moncœur Island to dredge. Lowered cutter, and landed exploring party on E. Moncœur Island. At 11 A.M. hove up dredge. Fired two guns to recall exploring party. At noon stopped off N.W. point of E. Moncœur Island. At 12.20 P.M. exploring party returned. Proceeded N.E. by E. At 1.20 P.M. stopped to trawl. At 2.40 P.M. hove up trawl, and made sail. At 7.30 P.M. lost sight of Wilson's Promontory Light.

The following species are recorded in the Zoological Reports from the dredge and trawl at this Station:—

ANIMALS FROM
DREDGE AND
TRAWL.

KERATOSA (Poléjaeff, Zool. pt. 31).

Psammoclema ramosum, Marshall. One specimen; obtained at no other locality by the Challenger. Recorded from Bass Strait.

„ *foliaceum*, n.sp. One specimen; obtained at no other locality.

Cacospongia tuberculata, n.sp. Two specimens; obtained at no other locality.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Pachychalina elongata, n.sp. One specimen; obtained at no other locality.

„ (?) *punctata*, n.sp. One specimen; obtained at no other locality.

Chalina pergamentacea, Ridley. One specimen; obtained at no other locality by the Challenger. Recorded from Brazil and Torres Strait.

STATION 162

Chalina sp. (?). One specimen.

Siphonochalina annulata, n.sp. Two specimens ; obtained at no other locality.

Rhizochalina putridosa (Lamarek ?). Three specimens ; obtained also at Bahia and Port Jackson.

Tedania commixta, n.sp. One specimen ; obtained at no other locality.

Eesperella arenicola, n.sp. One specimen and fragments ; obtained at no other locality.

„ sp. (?). One specimen.

Clathria elegantula, n.sp. One specimen ; obtained at no other locality.

Plumohalichondria mammillata, Carter. One specimen ; obtained at no other locality by the Challenger. Recorded from Australia.

Echinoclathria farus, Carter. Six specimens (growing on *Pecten* shells) ; obtained at no other locality by the Challenger.

„ *carteri*, n.sp. One or two specimens ; obtained also at Station 163A and Port Jackson, 30 to 120 fathoms.

„ *glabra*, n.sp. One specimen ; obtained at no other locality.

Spirastrella massa, n.sp. Two large pieces ; obtained at no other locality.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Pilochrota lendenfeldi, n.g., n.sp. One specimen ; obtained at no other locality.

Anthastra communis, n.g., n.sp. Three specimens ; obtained also at Station 163A and Port Jackson, 6 to 150 fathoms.

Psummastra murrayi, n.g., n.sp. One specimen ; obtained at no other locality. Only species of the genus.

Tethya ingalli, Bowerbank. One specimen ; obtained also at Port Jackson, 6 to 15 fathoms. Recorded from Australia and Seychelles.

CALCAREA (Poléjaeff, Zool. pt. 24).

Sycon arboreum (Haeckel). Four specimens ; obtained at no other locality by the Challenger. Recorded from Australia.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Melitodes rugosa, n.sp. Obtained at no other locality.

Mopsea encrinura (Lamarek). Three specimens ; obtained at no other locality by the Challenger. Recorded from Australia.

CORALS (Moseley, Zool. pt. 7).

Flabellum transversale, n.sp. One specimen ; obtained at no other locality.

Balanophyllia bairdiana, M.-Edwards and Haime. Three specimens ; obtained also at Port Jackson, 30 to 35 fathoms.

HYDROIDA (Allman, Zool. pts. 20 and 70).

STATION 162.

- Heteroplon pluma*, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.
- Diplocheilus mirabilis*, n.g., n.sp. One fragmentary specimen; obtained at no other locality. Only species of the genus.
- Calamphora parvula*, n.g., n.sp. Numerous specimens; obtained at no other locality. Only species of the genus.
- Desmoscyphus pectinatus*, n.sp. Obtained also at Bahia.
- Dictyocladium dichotomum*, n.g., n.sp. Numerous specimens; obtained at no other locality. Only species of the genus.

ASTEROIDEA (Sladen, Zool. pt. 51).

- Astropecten pectinatus*, n.sp. Obtained also at Station 161 and Port Jackson.
- Nectria ocellifera* (Lamarck), Gray. Several specimens; obtained at no other locality by the Challenger. Recorded from Australia.
- Stichaster polyplax* (Müller and Troschel). Obtained at no other locality by the Challenger. Recorded from Australia.
- Asterias* (*Stolasterias*) *calamaria*, Gray. Obtained also at Port Jackson. Recorded from Australia, New Zealand, and Mauritius.

OPHIUROIDEA (Lyman, Zool. pt. 14).

- Pectinura arenosa*, n.sp. Obtained at no other locality.
- Ophioglypha kinbergi*, Ljungman. Obtained also at Stations 161, 188, and Port Jackson.
- Ophiocnida pilosa*, n.sp. Obtained also at Station 212, 10 to 20 fathoms.
- Ophionereis schayeri* (Müller and Troschel). Obtained at no other locality by the Challenger.
- Ophiomyxa australis*, Lütken. For distribution see Station 109.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Goniocidaris tubaria* (Lamarck). Obtained also at Station 161.
- Sphærechinus australiæ*, Agassiz. Obtained at no other locality by the Challenger.
- Microcyphus zigzag*, Agassiz. Obtained also at Station 161.
- Amblypneustes formosus*, Val. Obtained at no other locality by the Challenger.
- Peronella peroni* (Agassiz). Obtained also at Port Jackson, 30 to 35 fathoms.

NEMERTEA (Hubrecht, Zool. pt. 54).

- Drepanophorus serraticollis*, Hubrecht. Two fragments; obtained also at Station 149.

STATION 162

ANNELIDA (M'Intosh, Zool. pt. 34).

- Polynoe platycirrus*, n.sp. A few specimens; obtained also at Station 163A, 150 fathoms.
- Thalenessa oculata*, n.sp. One specimen; obtained also at Station 172, 18 fathoms.
- Staurocephalus australiensis*, n.sp. One specimen; obtained at no other locality.
- Eunice vittata* (Delle Chiaje). Obtained also at Bermuda.
- „ *pycnobranchiata*, n.sp. Several specimens; obtained also at Station 163A, 150 fathoms.
- „ *bassensis*, n.sp. One fragmentary specimen; obtained at no other locality.

OSTRACODA (Brady, Zool. pt. 3).

- Aglania* (?) *pusilla*, n.sp. Obtained at no other locality.
- Pontocypris faba* (Reuss) (?). Obtained also at Sandwich Islands, 40 fathoms.
Fossil—Antwerp Crag.
- Macrocypris maculata*, Brady. Obtained also at Stations 145, 149, the Cape, and Amboina.
- Bythocypris reniformis*, n.g., n.sp. For distribution see Station 24.
- Bairdia villosa*, n.sp. Obtained also at Stations 135, 145, and 149.
- „ *amygdaloides*, Brady. Obtained also at Stations 185, 187, 305, Port Jackson, New Guinea, and Sandwich Islands, 2 to 165 fathoms.
- „ *foreolata*, Brady. For distribution see Station 33.
- „ *victrix*, Brady. For distribution see Station 24.
- Cythere canaliculata* (Reuss). Obtained also at Port Jackson, 2 to 10 fathoms.
Recorded from Australia. Fossil—European Tertiaries.
- „ *kerquelenensis*, n.sp. Obtained also at Stations 145, 149, and Port Jackson.
- „ *rastrumarginata*, n.sp. Obtained also at Station 167 and Sandwich Islands, 150 and 40 fathoms.
- „ *obtusulata*, n.sp. Obtained also at Admiralty Islands, 16 to 25 fathoms.
- „ *scalbrocuneata*, n.sp. Obtained also at Station 233B, 15 fathoms, and Wellington Harbour, N.Z.
- Xestoleberis granulosa*, n.sp. Obtained also at Port Jackson, 2 to 10 fathoms.
- Cytherura cryptifera*, n.sp. One specimen; obtained at no other locality.
- Cytherella cavernosa*, Brady. Obtained also at Station 187, 6 to 8 fathoms.
Recorded from Java.

AMPHIRODA (Stebbing, Zool. pt. 67).

- Heppamedon miersi*, n.sp. One specimen; obtained at no other locality.
- Edicerosides ornata*, n.g., n.sp. One specimen; obtained at no other locality.

Liljeborgia haswelli, Stebbing. One specimen; obtained at no other locality by the Challenger. Recorded from Tasmania and Port Jackson. STATION 162.

„ *æquabilis*, n.sp. One specimen; obtained at no other locality.

Autonoe philacantha, n.sp. One specimen; obtained at no other locality.

ISOPODA (Beddard, Zool. pt. 33).

Serolis tuberculata, Grube. One specimen; obtained also at Station 161.

„ *australiensis*, n.sp. Three specimens; obtained at no other locality.

„ *pallida*, n.sp. One specimen; obtained also at Port Jackson, 30 to 35 fathoms.

Five other specimens, genera and species undetermined.

MACRURA (Spence Bate, Zool. pt. 52).

Alpheus gracilipes, Stimpson. Two specimens; obtained at no other locality by the Challenger. Recorded from Tahiti.

Leptochela robusta, Stimpson. Sixteen specimens; obtained also near the surface off Sydney. Recorded from China Sea and Loo-choo Islands.

ANOMURA (Henderson, Zool. pt. 69).

Dromia ciliata, n.sp. One specimen; obtained at no other locality.

Cryptodromia lateralis (Gray). Two specimens; obtained also at Station 163A and Port Jackson (?), 2 to 150 fathoms. Recorded from Australia and New Zealand to Japan and Philippines.

Clibanarius strigimanus (White). One specimen (in shell of *Voluta*); obtained at no other locality by the Challenger. Recorded from Tasmania.

Eupagurus lacertosus, n.sp., var. *nana*, nov. Many specimens (in shells of *Nassa*, *Turritella*, *Murex*, and *Eburna*); obtained also at Stations 161 and 163B.

Munida subrugosa (White), var. *australiensis*, nov. Several specimens; obtained at no other locality (for distribution of the species see Station 304).

BRACHYURA (Miers, Zool. pt. 49).

Achæus tenuicollis, n.sp. Two specimens; obtained also at Station 161.

Chlorinoides coppingeri (Haswell). Two specimens; obtained at no other locality by the Challenger. Recorded from Australia and Indian Ocean.

Micippa spinosa, Stimpson, var. *affinis*, nov. Three specimens; obtained at no other locality. The species was taken at Port Jackson.

STATIONS 162

- Actæa peronii* (M.-Edwards). Several specimens; obtained also at Port Jackson (?), 2 to 10 fathoms. Recorded from Australia.
- Pilumnus tomentosus*, Latreille (?). Several specimens; obtained also at Station 161.
- Portunus corrugatus* (Pennant). Four specimens; obtained also at Stations 75, 161, and Cape Verdes.
- Lbalia tuberculosa* (M.-Edwards). Several specimens; obtained also at Stations 142, 163A, 167, and Port Jackson.
- „ (*Phlyxia*) *crassipes* (Bell). Several specimens; obtained also at Port Jackson, 2 to 35 fathoms. Recorded from Australia.
- Merocryptus lambriformis*, M.-Edwards. Several specimens; obtained also at Station 163A, 150 fathoms. Recorded from Upolu.

PYCNOGONIDA (Hoek, Zool. pt. 10).

- Pallene australiensis*, n.sp. One specimen; obtained also at Station 163A, 150 fathoms.
- „ *lævis*, n.sp. One specimen; obtained at no other locality.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Myochama anomioides*, Stutchbury. Obtained also at Port Jackson, 2 to 10 fathoms.
- Thracia watsoni*, n.sp. Obtained at no other locality.
- „ *myodoroides*, n.sp. Obtained at no other locality.
- Venus* (*Chione*) *striatissima*, Sowerby. Obtained also at Port Jackson, 2 to 10 fathoms.
- Cytherea* (*Callista*) *rutila*, Sowerby. Two odd valves; obtained at no other locality by the Challenger.
- Cardium* (*Bucardium*) *pulchellum*, Gray. Obtained also at Station 161 and Port Jackson.
- Kellia rotunda* (Deshayes), var. (?). Several specimens; obtained also at Port Jackson. Recorded from Australia.
- Cardia calyculata* (Linné). Obtained also at Station VIIp.
- „ *beddomei*, n.sp. One specimen; obtained at no other locality.
- „ *limaculata*, Deshayes. Obtained at no other locality by the Challenger. Recorded from New Zealand.
- „ *dilecta*, n.sp. Obtained at no other locality.
- Crassatella aurora*, Adams and Angas. Obtained at no other locality by the Challenger. Recorded from Tasmania.
- Trigonia margaritacea*, Lamarck. Obtained at no other locality by the Challenger. Recorded from Australia.
- Pectunculus beddomei*, n.sp. Obtained at no other locality.

- Limopsis bassi*, n.sp. Obtained at no other locality. STATION 162.
Arca (Barbatia) radula, Adams. Obtained at no other locality by the Challenger.
 Recorded from Australia.
Pinna tasmanica, T.-Woods (?). One specimen; obtained at no other locality by the Challenger.
Lima (Limatula) bullata (Born). Obtained also at Port Jackson, 2 to 10 fathoms.
 Recorded from Australia and Philippines.
Pecten asperrimus, Lamarck. Obtained at no other locality by the Challenger.
 „ *undulatus*, Sowerby. Obtained at no other locality by the Challenger.
 Recorded from Tasmania.

GASTEROPODA (Watson, Zool. pt. 42).

- Trochus (Ziziphinus) tinctus*, n.sp. Obtained at no other locality.
 „ sp. (?).
Murex (Chicoreus) palmiferus, Sowerby. Obtained at no other locality by the Challenger. Recorded from Port Jackson.
 „ (*Pteronotus*) *triformis*, Reeve. Obtained at no other locality by the Challenger. Recorded from Australia.
 „ („) *cordismei*, n.sp. Obtained at no other locality.
Nassa (Niotha) pauperata (Lamarck). Obtained also at Station 161 and Port Jackson.
Fusus pyrulatus, Reeve. One young specimen; obtained at no other locality by the Challenger. Recorded from Tasmania.
 „ *novæhollandiæ*, Reeve. Obtained at no other locality by the Challenger.
 Recorded from Australia.
Eburna (Zemira) australis, Sowerby. Obtained also at Port Jackson, 6 to 7 fathoms.
 Recorded from Port Jackson.
Fasciolaria coronata, Lamarck. Obtained at no other locality by the Challenger.
 Recorded from Australia, Tasmania, and Philippines.
 „ sp. (?). (Probably young of *Fasciolaria coronata*).
Mitra (Nebularia) glabra, Swainson (?). One small specimen; obtained at no other locality by the Challenger. Recorded from Australia.
 „ (*Pusia*) *cineracea*, Reeve. Obtained at no other locality by the Challenger.
 Recorded from Philippines.
Voluta (Scaphella) undulata, Lamarck. Obtained at no other locality by the Challenger. Recorded from Australia.
Marginella (Persicula) ovulum, Sowerby. Obtained also at Port Jackson, 2 to 10 fathoms. Recorded from Australia.

STATION 162

Marginella, four other species undetermined.

Pleurotoma (*Drillia*) *quoyi*, Desmoulins. Obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.

„ („) *kymatoessa*, n.sp. Obtained at no other locality.

„ sp. (?).

Conus (*Leptoconus*) *anemone*, Lamarck. Obtained at no other locality by the Challenger. Recorded from Australia.

Triton subdistortus, Lamarck. Obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.

„ (*Epidromus*) sp. (?).

Cypræa piperata, Solander. Obtained at no other locality by the Challenger. Recorded from Australia.

„ (*Trivia*) *australis*, Lamarck. Obtained at no other locality by the Challenger. Recorded from Australia.

Crepidula immersa (Angas). Two specimens; obtained at no other locality by the Challenger. Recorded from Australia.

Turritella cordisimei, n.sp. Obtained at no other locality.

„ *lamellosa*, n.sp. Obtained at no other locality.

„ *runcinata*, n.sp. Obtained at no other locality.

„ *accisa*, n.sp. Obtained at no other locality.

„ *carlottæ*, n.sp. Obtained also at Station 167A, 10 fathoms.

Odostomia (*Parthenia*) *casta* (Adams). Obtained also at Port Jackson, 2 to 10 fathoms. Recorded from China Seas and Australia.

Stylifer crotaphis, n.sp. One specimen; obtained at no other locality.

Bittium sp. (?).

Triforis, two species undetermined.

Litorina mauritiana (Lamarck). Obtained at no other locality by the Challenger. Recorded from Indian Ocean, Malay Archipelago, and Australia.

Rissoa sp. (?).

Actæon austrinus, n.sp. Obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Octopus boscii (Lesueur), var. *pallida*, nov. One specimen; obtained also at Station 163A, 150 fathoms. The species recorded from Australia.

POLYZOA (Busk, Zool. pts. 30 and 50; Waters, pt. 79).

Actæa anguina (Linné). Obtained also at Stations 36, 135, 161, and 204.

- Catenicella hastata*, Busk. Obtained also at Stations 161 and 163A. STATION 162.
- Canda arachnoides*, Lamouroux. Obtained at no other locality by the Challenger.
Recorded from Bass Strait, New Zealand, and Timor.
- Flustra membraniporides*, n.sp. Obtained also at Port Jackson, 35 fathoms.
- Carbasea dissimilis*, Busk. Obtained also at Stations 161, 163A, and 196.
- „ *elegans*, Busk. Obtained also at Station 314, 70 fathoms. Recorded from Tasmania.
- „ *pisciformis*, Busk. Obtained at no other locality by the Challenger.
Recorded from Australia and Tasmania.
- Diachoris crotali*, Busk. Obtained at no other locality by the Challenger.
Recorded from Australia.
- Membranipora crassimarginata* (Hincks), var. *crecta*, nov. Obtained also at Station 151.
- Amphiblestrum cervicorne*, Busk. Obtained at no other locality by the Challenger.
Recorded from Australia.
- Foveolaria elliptica*, n.g., n.sp. Obtained also at Station 320, 600 fathoms.
- Caleschara denticulata*, MacGillivray (?), var. *tenuis*, nov. Obtained at no other locality. The species recorded from Australia.
- Salicornaria clavata*, n.sp. Obtained also at Stations 145, 149, 151, 163B, and 304.
[Waters calls it *Cellaria australis*, MacGillivray].
- „ *simplex*, n.sp. Obtained at no other locality by the Challenger.
Recorded from New Zealand. [Waters calls it *Cellaria rigida*, MacGillivray].
- Retepora crassa*, n.sp. Obtained also at Station 161. [Waters calls it *Retepora porcellana*, MacGillivray].
- „ *victoriensis*, n.sp. (?). Obtained also at Station 161 and Japan (var. *japonica*). [Waters calls it *Retepora monilifera*, MacGillivray, form *munita*, Hincks].
- „ *phaenicea*, Busk. Obtained at no other locality by the Challenger.
Recorded from Australia.
- Microporella coscinopora*, var. *armata*, Waters. Obtained at no other locality by the Challenger.
- Eschara gracilis*, Lamarck. Obtained also at Station 190, 49 fathoms. Recorded from Bass Strait. Fossil—Tertiary and Miocene (?) of Australia.
- Mucronella pyriformis*, n.sp. Obtained also at Station 161. [Waters calls it *Bracebridgia geometrica* (Reuss)].
- „ *tricuspis*, Hincks. Obtained also at Stations 145, 315, and Simon's Bay, Cape.

STATION 162

Schizoporella triangula, Hincks. Obtained also at Station 151.

„ *woosteri*, MacGillivray. Obtained at no other locality by the Challenger.

Cellepora hastigera, n.sp. Obtained at no other locality.

„ *columnaris*, n.sp. Obtained at no other locality.

„ *bidenticulata*, n.sp., var. *subæqualis*, nov. Obtained at no other locality. The species was taken at Port Jackson, 35 fathoms.

„ *granum*, Hincks. Obtained at no other locality by the Challenger. Recorded from Bass Strait.

Pustulopora regularis, MacGillivray. Obtained at no other locality by the Challenger. Recorded from Australia.

Amathia spiralis, Lamouroux. Obtained also at Stations 161 and 163A.

BRACHIOPODA (Davidson, Zool. pt. 1).

Terebratulina cancellata, Koch. Numerous specimens; obtained at no other locality by the Challenger. Recorded from Australia.

TUNICATA (Herdman, Zool. pts. 17 and 38).

Microcosmus propinquus, n.sp. One specimen; obtained at no other locality.

„ *polymorphus*, Heller. One specimen; obtained at no other locality by the Challenger. Recorded from Mediterranean.

Cynthia fissa, n.sp. Several specimens; obtained at no other locality.

„ *hispida*, n.sp. Two specimens; obtained at no other locality.

Styela radicata, n.sp. One specimen; obtained also at Station 163 (?), 120 fathoms.

Polycarpa molguloides, n.sp. Two specimens; obtained at no other locality.

„ *rigida*, n.sp. Two specimens; obtained at no other locality.

„ *bassi*, n.sp. One specimen; obtained at no other locality.

Pachyclæna oblonga, n.g., n.sp. One specimen; obtained at no other locality.

„ *obesa*, n.g., n.sp. Two specimens; obtained at no other locality.

Colella murrayi, n.g., n.sp., var. *rubida*, nov. One colony; obtained at no other locality. The species was taken at Station 163D, 120 fathoms.

Atopogaster aurantiaca, n.g., n.sp. One colony; obtained at no other locality.

Amaroucium albidum, n.sp. Two colonies; obtained at no other locality.

Didemnum aurantiacum, n.sp. One colony; obtained at no other locality.

FISHES (Günther, Zool. pt. 6).

Lepidotrigla phalana, C.V. Obtained at no other locality by the Challenger. Recorded from Australia.

Percis allporti, Gunther. Obtained also at Station 163A, 150 fathoms (?).

Callionymus calauropomus, Rich. Obtained also at Station 204, 115 fathoms.

STATION 162.

Lophonectes gallus, n.g., n.sp. Obtained also at Port Jackson, 30 fathoms. Only species of the genus.

In addition to the foregoing, the following are recorded in the Station-book:—Actinian, several Comatulæ, and shell of *Argonauta hians*.

Excluding Protozoa, about 500 specimens of invertebrates and fishes were obtained at this Station, belonging to about 210 species, of which 94 are new to science, including representatives of 14 new genera; 65 of the new species and 5 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "The dredge and trawl brought up a great mass of specimens very well illustrating the Australian shallow-water fauna. Besides the remarkable *Goniocidaris* and other Echinoderms, all the chief genera of the larger Polyzoa: *Eschara*, *Retepora*, *Flustra*, *Catenicella*, *Biflustra*, were found. There were only a few Annelids, among which I remarked a very elongated form of Aphroditaceans. A *Ranina* was found commensalistic in Ascidians and Sponges. Ascidians were very plentiful, both simple and composite. Among the Mollusca, which were represented by some genera of warmer climates, as *Pinna*, *Conus*, and *Cypræa*, we found empty shells of *Trigonia* and *Argonauta*, also some specimens of Octopod cuttle-fishes. The fishes included a small species of *Balistes*, *Trigla*, and *Platessa*."

Surface Organisms.—The following species are recorded from the surface in this locality:—

ORGANISMS FROM
SURFACE-NETS.

RADIOLARIA (Haeckel, Zool. pt. 40).

Xiphostylus phasianus, Haeckel.

Castanidium bromleyi, Haeckel.

COPEPODA (Brady, Zool. pt. 23).

Acartia denticornis, n.sp.

Candace pectinata, Brady.

Copilia mirabilis, Dana.

Corycæus varius, Dana.

Oncæa obtusa (Dana).

Saphirina ovalis, Dana.

Setella gracilis, Dana.

AMPHIPODA (Stebbing, Zool. pt. 67).

Euthemisto australis, n.sp. (?).

Phoxocephalus bassi, n.sp.

Tetrathyrus moncæuri, n.sp.

Thamneus platyrrhynchus, n.sp.

SCHIZOPODA (Sars, Zool. pt. 37).

Nyctiphanes australis, n.g., n.sp.

PTEROPODA (Pelseneer, Zool. pt. 65).

Limacina inflata (d'Orbigny).

„ *lesueuri* (d'Orbigny).

„ *trochiformis* (d'Orbigny).

„ *bulimoides* (d'Orbigny).

Clio (Creseis) virgula (Rang).

Cavolinia longirostris (Lesueur).

STATION 162.

PTEROPODA (Pelseneer, Zool. pt. 65).

Carolinia gibbosa (Rang).
Cleodora compressa, Souleyet
 [= young of *Carolinia*
trispinosa].

TUNICATA (Herdman, Zool. pt. 76).

Doliolum denticulatum, Quoy and
 Gaimard.
Salpa democratica - mucronata,
 Forskåhl.

In addition, the following are recorded in the note-books:—*Beroë*, *Hyperia*, *Euphausia*, Megalopa stage of crab, and small fish. Two fur-seals were seen swimming about the ship.

Willemoes-Suhm writes: "On the surface we found a great many *Euphausiæ* Megalopæ of a Brachyurous crab, many small chain-bearing *Salpæ*, and fine rose-coloured specimens of a *Beroë*."

STATION 163.

Station 163 (Sounding 267), Melbourne to Sydney (see Chart 25).

April 4, 1874; lat. 36° 57' S., long. 150° 34' E.

Temperature of air at noon, 67°·3; mean for the day, 65°·3.

Temperature of water:—

Surface, ...	72·0	200 fathoms, ...	51·4
50 fathoms, ...	65·2	250 „	49·2
100 „	59·3	300 „	47·6
150 „	54·9	Bottom, ...	34·5

Density at 60° F. at surface, 1·02652; bottom, 1·02601.

Depth, 2200 fathoms; deposit, Globigerina Ooze, containing 61·77 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6.30 A.M. shortened and furled sails, and got up steam to sound and trawl. At 9 A.M. sounded in 2200 fathoms. Obtained serial temperatures at intervals of 50 fathoms down to 300 fathoms. At 11 A.M. completed temperature observations, and proceeded under steam W. by N. towards the land.

STATION 163A.

Station 163A.

At 1.30 P.M. stopped and sounded in 150 fathoms, deposit Green Mud (?). Put over trawl. At 2 P.M. hove up trawl and proceeded. At 2.30 P.M. stopped and put trawl over again. At 3.45 P.M. hove up trawl. The two trawlings were very successful, the

depth varying from 120 to 150 fathoms. Proceeded under steam to swing ship for errors of compasses. At 6.30 P.M. completed swinging, and proceeded N. by W. At midnight sounded in 150 fathoms, no bottom. STATION 163A.

The following species are recorded in the Zoological Reports from the trawl at this Station :— ANIMALS FROM TRAWL.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Desmacidon fruticosa (Montagu), var. One specimen ; obtained at no other locality by the Challenger. Recorded from Britain.

Iophon cylindricus, n.sp. Two specimens ; obtained at no other locality.

„ (?) *omnivorus*, n.sp. One specimen ; obtained at no other locality.

Clathria inanchorata, n.sp. Two specimens ; obtained at no other locality.

Echinoclathria carteri, n.sp. Three or four specimens ; obtained also at Station 162 and Port Jackson.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Chrotella simplex, n.g., n.sp. Four specimens ; obtained at no other locality. The only other species of the genus (*Chrotella macella*) was taken at Station 208.

Craniella pulchra, n.sp. Two specimens ; obtained at no other locality.

Anthastra pulchra, n.g., n.sp. Ten specimens ; obtained at no other locality.

„ *communis*, n.g., n.sp. Thirty-five specimens ; obtained also at Station 162 and Port Jackson.

CALCAREA (Poléjaeff, Zool. pt. 24).

Leucosolenia poterium (Haeckel) (?). Numerous specimens ; obtained also at Port Jackson, 30 to 35 fathoms. Recorded from Australia and Patagonia.

Ute argentea, n.sp. One specimen ; obtained at no other locality.

Eilhardia schulzei, n.g., n.sp. One or two specimens ; obtained also at Port Jackson, 30 to 35 fathoms. Only species of the genus.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Eunephthya fusca, n.sp. One specimen ; obtained at no other locality.

Primoella grandisquamis, n.sp. Obtained at no other locality.

„ *australasiae*, Gray. Several specimens ; obtained also at Port Jackson, 30 to 35 fathoms. Recorded from Australia and New Zealand.

STATION 163A.

CORALS (Moseley, Zool. pt. 7).

Cyathoceras cornu, n.g., n.sp. One specimen; obtained also at Station 320, 600 fathoms. The only other species of the genus (*Cyathoceras rubescens*) was taken at Station 192.

Flabellum australe, n.sp. Eleven specimens; obtained at no other locality.

HYDROIDA (Allman, Zool. pts. 20 and 70).

Plumularia laxa, n.sp. Obtained at no other locality.

Halecium beanii, Johnston. Obtained also at Station 75.

Perisiphonia filicula, n.g., n.sp. Obtained also at Station 75.

Hypopyxis labrosa, n.g., n.sp. Obtained at no other locality. Only species of the genus.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiopeza yoldii, Lütken (?). Obtained at no other locality by the Challenger.

Amphiura squamata (Delle Chiaje), Sars. Obtained also at Station 141.

Ophiocoma sp. (?) (young ?).

Ophiothrix aristulata, n.sp., var. Obtained also at Stations 142 and 161.

Ophiomyxa australis, Lütken. For distribution see Station 109.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Echinanthus testudinarius, Gray. Obtained also at Station 161.

ANNELIDA (M'Intosh, Zool. pt. 34).

Polynoë platycirrus, n.sp. Several specimens; obtained also at Station 162. A fragment stated in error to have come from Station 163, 2200 fathoms.

Phyllodoce duplex, n.sp. One specimen; obtained at no other locality.

Eunice pycnobranchiata, n.sp. Obtained also at Station 162.

Terebella grubei, n.sp. One fragmentary specimen; obtained at no other locality.

„ (*Lanice*) *flabellum*, Baird. Obtained also at Station 145.

ISOPODA.

Seven specimens, genera and species undetermined.

ASOMURA (Henderson, Zool. pt. 69).

Cryptodromia lateralis (Gray). One specimen; obtained also at Station 162 and Port Jackson (?).

- Cryptodromia incisa*, n.sp. Two specimens ; obtained at no other locality. STATION 163A.
Latreillia australiensis, n.sp. Three specimens ; obtained also at Port Jackson,
 30 to 35 fathoms.
Glaucothoë carinata, n.sp. One specimen ; obtained at no other locality.
Pylocheles spinosus, n.sp. Several specimens ; obtained at no other locality.
Galathea pusilla, n.sp. Three specimens ; obtained at no other locality.
Munida haswelli, n.sp. Four specimens ; obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

- Ebalia tuberculosa* (M.-Edwards). Two specimens ; obtained also at Stations 142,
 162, 167, and Port Jackson.
Merocryptus lambriformis, M.-Edwards. Two specimens ; obtained also at
 Station 162.

PYCNOGONIDA (Hoek, Zool. pt. 10).

- Pallene australiensis*, n.sp. Two specimens ; obtained also at Station 162.

CEPHALOPODA (Hoyle, Zool. pt. 44).

- Octopus boscii* (Lesueur), var. *pallida*, nov. Two specimens ; obtained also at
 Station 162.
 „ *duplex*, n.sp. Two specimens ; obtained at no other locality.
Sepia cultrata, Steenstrup, MS. One specimen ; obtained at no other locality by
 the Challenger. Recorded from Australia.

POLYZOA (Busk, Zool. pts. 30 and 50 ; Waters, pt. 79).

- Eucratea chelata* (Linné). Obtained at no other locality by the Challenger. A
 widely-distributed species.
Catenicella ventricosa, Busk, var. *maculata*, Busk. Obtained at no other locality
 by the Challenger. Recorded from Australia.
 „ *hastata*, Busk. Obtained also at Stations 161 and 162.
 „ *plagiostoma*, Busk. Obtained also at Port Jackson, 35 fathoms.
 Recorded from Australia and Banks Strait.
 „ *elegans*, Busk. Obtained also at Stations 122, 135, and 188.
Didymia simplex, Busk. Obtained at no other locality by the Challenger.
 Recorded from Australia and New Zealand.
Dimetopia cornuta, Busk. Obtained at no other locality by the Challenger.
 Recorded from Australia.
Flustra denticulata, Busk. Obtained at no other locality by the Challenger.
 Recorded from New Zealand.

STATION 163A.

- Carbasea dissimilis*, Busk. Obtained also at Stations 161, 162, and 196.
- Membranipora spinosa*, d'Orbigny. Obtained at no other locality by the Challenger. Recorded from Patagonia and Australia.
- Amphiblestrum umbonatum*, Busk. Obtained also at Station 313, 55 fathoms. Recorded from Australia and Tasmania.
- Calymmophora lucida*, n.g., n.sp. Obtained at no other locality. Only species of the genus. [Waters calls it *Urceolipora nana*, MacGillivray].
- Salicornaria divaricata*, n.sp. Obtained at no other locality by the Challenger. Recorded from Port Philip.
- „ *bicornis*, Busk. Obtained at no other locality by the Challenger. Recorded from Tasmania and Bass Strait.
- Tubucellaria hirsuta* (Lamouroux). Obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.
- Smittia transversa*, n.sp. Obtained at no other locality.
- Adcona appendiculata*, n.sp. Obtained at no other locality.
- Crisia conferta*, Busk. Obtained also at Cape Verdes.
- Amathia spiralis*, Lamouroux. Obtained also at Stations 161 and 162.
- „ *tortuosa*, Woods (?). Obtained at no other locality by the Challenger. Recorded from Australia.
- Ascopodaria fruticosa* (Hincks). Obtained at no other locality by the Challenger. Recorded from Port Philip Heads.

BRACHIOPODA (Davidson, Zool. pt. 1).

- Terebratula ura*, Broderip. One specimen; obtained also at Stations 150 and 320.
- Megerlia willemöesi*, n.sp. Several specimens; obtained at no other locality.

TUNICATA (Herdman, Zool. pt. 17).

- Polycarpa radicata*, n.sp. One specimen; obtained also at Port Jackson, 6 fathoms.
- Acidia cylindracea*, n.sp. One specimen; obtained at no other locality.

FISHES (Günther, Zool. pts. 6 and 57).

- Raja nitida*, n.sp. One specimen; obtained at no other locality.
- Etelis* sp. (?). Two young specimens.
- Scorpana cruenta*, Solander. Obtained also at New Zealand.
- „ *percoodes*, Solander. Obtained also at Stations 166 and 173, 275 and 315 fathoms. Recorded from Australia, Tasmania, and New Zealand.





Sebastes percoides, Rich. Obtained also at Port Jackson, 30 fathoms, and STATION 163A.
D'Urville Island, New Zealand.

Percis allporti, Günther. Obtained also at Station 162.

Brachionichthys hirsutus, Lac. Obtained at no other locality by the Challenger.

Callionymus phasis, n.sp. One specimen; obtained at no other locality.

Pseudophycis bacchus (Forst.). Obtained also at D'Urville Island, New Zealand.

Læops parviceps, n.g., n.sp. Obtained also at Station 190, 35 to 49 fathoms. Only species of the genus.

Chlorophthalmus nigripinnis, n.sp. Two specimens; obtained at no other locality.

Solenognathus fasciatus, n.sp. One specimen; obtained at no other locality.

In addition to the foregoing, the following are recorded in the Station-book:—
Several Actiniæ, Comatula, several Maiids, *Stenorhynchus*, *Ranina*, several Amphipods, *Lima*, *Limopsis*, *Pecten*, *Cypræa*, *Murex*.

Excluding Protozoa, about 300 specimens of invertebrates and fishes were obtained at this Station, belonging to about 94 species, of which 43 are new to science, including representatives of 8 new genera; 30 of the new species and 2 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "Among the Sponges small round silicisponges prevailed, together with very light, elongated and perforated, forms. There was again a large quantity of Polyzoa, but the forms differed from those taken in shallower water at the last Station, including the gregarious Pedicellina. Among the Annelids I found several Nereids, and among the Crustacea large Stenorhynchi and *Ranina*, this time commensalistic only in Sponges. The Mollusca were represented by a large tropical *Cypræa* and several Cephalopods, and the fishes by a Torpedo, a *Raia*, a *Hippocampus*, and a small Lophioid with crested head."

Moseley writes: "For the first time we procured enough fish to allow of our eating them. A red Percoid came up in abundance, also a large *Hippocampus*, a sting-ray, and dog-fish. Holothurians were apparently entirely absent."

Surface Organisms.—The following species are recorded from the surface at this Station :—

ORGANISMS FROM
SURFACE-NETS.

COPEPODA (Brady, Zool. pt. 23).

Calanus finmarchicus (Günner).

„ *valgus*, n.sp.

Pleuromma abdominale (Lubbock).

Undina vulgaris, Dana.

Undina darwinii, Lubbock.

Drepanopus furcatus, n.g., n.sp.

Temora dubia (Lubbock).

Centropages violaceus (Claus).

STATION 163A.

COPEPODA (Brady, Zool. pt. 23).

Candace pectinata, Brady.*Oncera obtusa* (Dana).

SCHIZOPODA (Sars, Zool. pt. 37).

Euphausia latifrons, n.sp.

MACRURA (Spence Bate, Zool. pt. 52).

Isotopus arcurostris, n.g., n.sp.*Diaphoropus versipellis*, n.g., n.sp.*Zoontocaris galatheæ*, n.g., n.sp.*Oodeopus serratus*, n.g., n.sp.

On the night of April 3, off Cape Howe, the sea was luminous, and two hauls of the tow-net procured:—Brown Medusæ, *Diphyes*, *Beroë*, Ostracodes, *Saphirina* and other Copepods in quantities, *Hyperia*, *Phronima*, *Squillerichthus*, *Euphausia*, *Lucifer*, *Sergestes*, *Zoëæ*, *Styliola*, *Cleodora* [= *Clio*], *Appendicularia*, and fish eggs in large numbers.

AT PORT JACKSON.

The Challenger remained at Port Jackson, Sydney, from 3 P.M. on April 6 till 7.30 A.M. on June 12, 1874 (for description of Sydney see *Narr. Chall. Exp.*, vol. i. pp. 454-463). While at Sydney the specimens collected during the southern cruise were catalogued and carefully packed by Mr. Murray, and despatched to England in 65 boxes and 10 casks.

On the morning of June 3 the ship proceeded out of the harbour with a party of visitors on board, including the principal scientific and naval men of Sydney, and when 6 or 7 miles from the entrance to Port Jackson a sounding was taken in 35 fathoms (Station 163B), and the dredge and trawl were lowered several times in from 30 to 40 fathoms, most of the specimens brought up belonging to the Port Jackson fauna. In the afternoon the ship returned and anchored at the entrance of Sydney Cove.

At 3.30 P.M. on June 8, the ship left Port Jackson, but the same night and following day such bad weather was experienced that it was found impossible to sound as proposed for the telegraph cable, and in consequence the ship returned and anchored in Watson's Bay on the evening of June 9. The weather continued unfavourable during June 10 and 11, the expedition finally leaving Port Jackson on the morning of June 12.

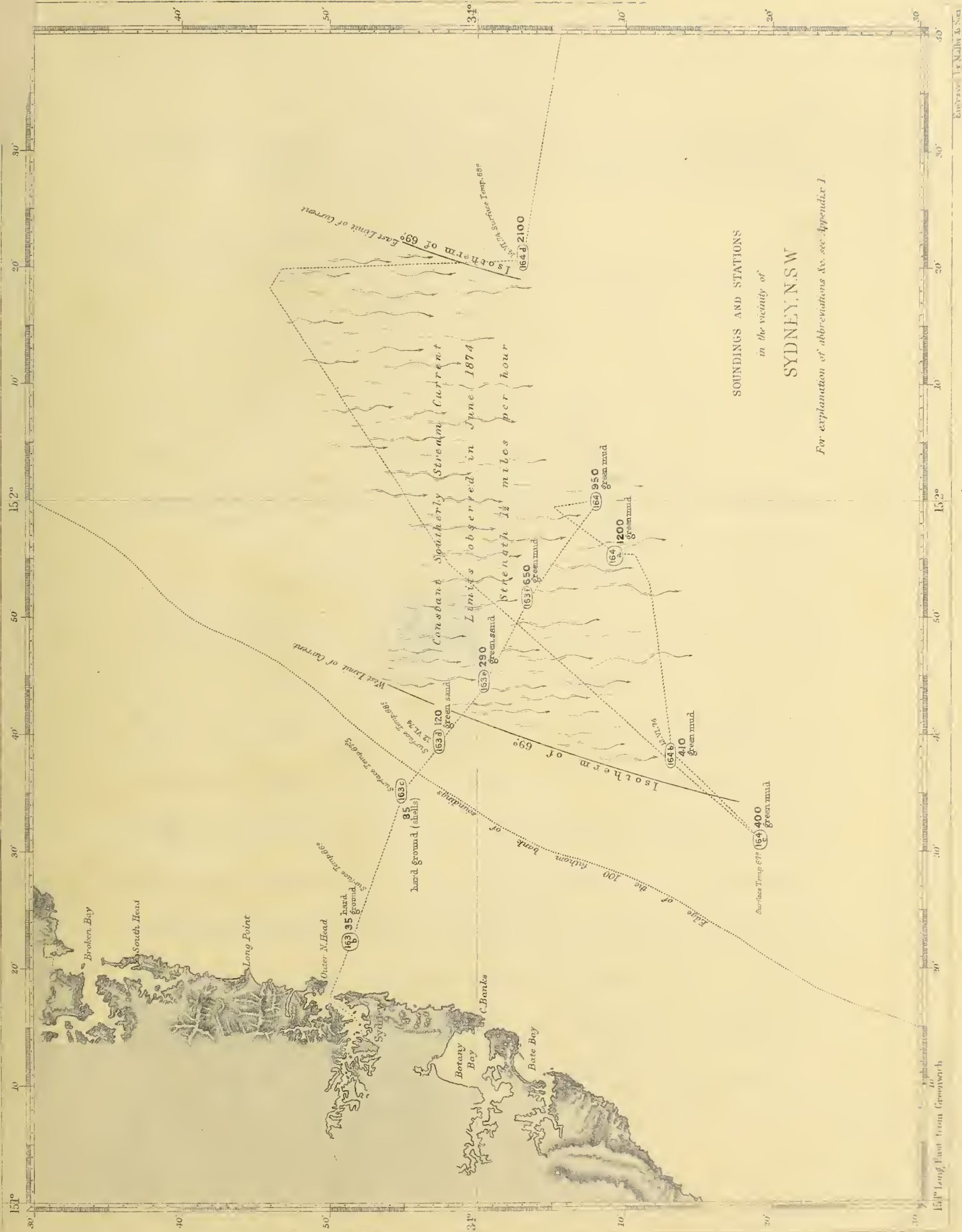
During the stay Mr. Murray conducted many dredgings from the steam pinnace within the Heads of Port Jackson. The following species are recorded in the Zoological Reports from the shore and from shallow water in the neighbourhood of Port Jackson, the depths given in the Reports being indicated:—

ANIMALS FROM
PORT JACKSON.

KERATOSA (Poléjaeff, Zool. pt. 31).

Spongelia spinifera, Schulze. Two specimens (7 fathoms); obtained at no other locality by the Challenger. Recorded from Adriatic.

Psammopemama densum, Marshall. One specimen (7 fathoms); obtained also at Station 49.



SOUNDINGS AND STATIONS

in the vicinity of

SYDNEY, N.S.W.

For explanation of abbreviations &c. see Appendix 1



- Cacospongia murrayi*, n.sp. One specimen (35 fathoms); obtained at no other locality. PORT JACKSON.
 „ *vesiculifera*, n.sp. One specimen (7 fathoms); obtained at no other locality.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

- Pachychalina lobata*, Ridley. One specimen (30 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Siphonochalina intermedia*, n.sp. One specimen (7 to 8 fathoms); obtained at no other locality.
- Rhizochalina putridosa* (Lamarck ?). One specimen (30 to 35 fathoms); obtained also at Station 162 and Bahia.
- Gelliodes poculum*, n.sp. One specimen overgrowing *Stryphnus niger* (30 to 35 fathoms); obtained at no other locality.
- Tedania digitata* (Schmidt). Several specimens (6 to 35 fathoms); obtained at no other locality by the Challenger. A widely-distributed species.
- „ „ var. *fibrosa*, nov. One specimen (7 fathoms); obtained at no other locality.
- Esperella murrayi*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.
- „ *porosa*, n.sp. Two specimens (30 to 35 fathoms); obtained at no other locality.
- Esperiopsis cylindrica*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.
- Amphilectus ceratosus*, n.sp. Three specimens (7 fathoms); obtained at no other locality.
- Clathria lendenfeldi*, n.sp. One specimen (depth not given); obtained at no other locality.
- Echinoclathria carteri*, n.sp. One specimen (30 to 35 fathoms); obtained also at Stations 162 and 163A.
- Phakellia flabellata*, n.sp. Eleven specimens (30 to 35 fathoms); obtained at no locality.
- Axinella arborescens*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.
- Suberites carnosus* (Johnston). One specimen (6 to 15 fathoms); obtained also at Station 75 and Fernando Noronha.
- „ *perfectus*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

PORT JACKSON.

Suberites durissimus, n.sp. One specimen (off S.E. coast of Australia, depth not given); obtained at no other locality.

Spirastrella papillosa, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Craniella simillima (Bowerbank). One specimen (35 fathoms); obtained also at Station 186, 8 fathoms, and Philippines. Recorded from South Seas.

Anthastra communis, n.g., n.sp. Eleven specimens (6 to 15 fathoms); obtained also at Stations 162 and 163A.

„ *pyriformis*, n.g., n.sp. Three specimens (30 to 35 fathoms); obtained at no other locality.

„ *ridleyi*, n.g., n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Stryphnus niger, n.g., n.sp. One specimen overgrown by *Gelliodes poculum* (30 to 35 fathoms); obtained at no other locality. Only species of the genus.

Cydonium eosaster, n.sp. Two specimens (6 to 15 fathoms); obtained at no other locality.

Synops nitida, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Discodermia discifurca, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Tethya ingalli, Bowerbank. One specimen (6 to 15 fathoms); obtained also at Station 162.

CALCAREA (Poléjaff, Zool. pt. 24).

Leucosolenia poterium (Haeckel) (?). Numerous specimens (30 to 35 fathoms); obtained also at Station 163A.

„ *lamarekii* (Haeckel). Two specimens (30 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Atlantic.

Amphoriscus poculum, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Leuconia loricata, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Leucetta imperfecta, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Leucetta hæckeliana, n.sp. Several specimens (30 to 35 fathoms); obtained at no other locality. PORT JACKSON.

Eilhardia schulzei, n.g., n.sp. One or two specimens (30 to 35 fathoms); obtained also at Station 163A. Only species of the genus.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Suberia genthi, n.sp. (Shallow water); obtained at no other locality.

Parisis australis, n.sp. Two fragments (35 fathoms); obtained at no other locality.

Mopsea dichotoma (Linné). Three specimens (35 fathoms); obtained at no other locality by the Challenger. Recorded from Indian Ocean.

Acanthoisis flabellum, n.g., n.sp. (30 to 35 fathoms); obtained at no other locality. Only species of the genus.

Primnoella australasiæ, Gray. Several specimens (30 to 35 fathoms); obtained also at Station 163A.

PENNATULIDA (Köl liker, Zool. pt. 2).

Sarcophyllum grande, Gray. Three fragments (6 to 15 fathoms); obtained at no other locality by the Challenger.

Cavernularia obesa, Valenciennes. Two specimens (30 to 35 fathoms); obtained at no other locality by the Challenger.

Clavella australasiæ, Gray. Two specimens and fragments (30 to 35 fathoms); obtained at no other locality by the Challenger.

CORALS (Moseley, Zool. pt. 7).

Balanophyllia bairdiana, M.-Edwards and Haime. One specimen (30 to 35 fathoms); obtained also at Station 162.

HYDROIDA (Allman, Zool. pts. 20 and 70).

Plumularia armata, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Halecium telescopicum, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

Sertularia annulata, n.sp. (35 fathoms); obtained at no other locality.

Syntheceum campylocarpum, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

„ *alternans*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.

CRINOIDEA (Carpenter, Zool. pt. 60).

Antedon macronema (Müller). Several specimens (30 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

PORT JACKSON.

Actinometra trichoptera (Valenciennes) (Müller). Several specimens (10 to 12 fathoms); obtained at no other locality. Recorded from Australia.

ASTEROIDEA (Sladen, Zool. pt. 51).

Astropecten polyacanthus, Müller and Troschel. (2 to 15 fathoms); obtained also at Admiralty Islands, Japan, and Hong Kong. Recorded from Indian and Pacific Oceans.

„ *pectinatus*, n.sp. (6 to 15 fathoms); obtained also at Stations 161 and 162.

Pentagonaster astrologorum (Müller and Troschel). (Sydney Harbour); obtained at no other locality by the Challenger. Recorded from Australia.

Anthenea acuta, Perrier. (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from India.

Asterina exigua (Lamarek). (6 fathoms); obtained also at Station 212, 10 fathoms, and the Cape.

„ *gunnii*, Gray. (7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Tasmania, and the Cape.

Asterias (*Stolasterias*) *calamaria*, Gray. (Depth not stated); obtained also at Station 162.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha kinbergi, Ljungman. (2 to 10 fathoms); obtained also at Stations 161, 162, and 188.

„ *multispina*, Ljungman. (2 to 10 fathoms); obtained at no other locality by the Challenger.

Ophiomusium flabellum, n.sp. (30 to 35 fathoms); obtained at no other locality.

Ophiactis resiliens, n.sp. (30 to 35 fathoms); obtained at no other locality.

Amphiura constricta, n.sp. (2 to 10 fathoms); obtained at no other locality.

Ophiothrix caespitosa, n.sp. (2 to 10 fathoms); obtained at no other locality.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Strongylocentrotus eurythrogrammus (Val.). (6 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from New Caledonia.

Holopneustes purpurescens (Lütken). (6 to 15 fathoms); obtained at no other locality by the Challenger.

Hipponoë variegata (Leske). (6 to 15 fathoms); obtained also at Fiji and Philippines.

- Fibularia australis*, Desmoulins. (30 to 35 fathoms); obtained also at Station 164, PORT JACKSON.
950 (?) fathoms.
- Peronella peroni* (Agassiz). (30 to 35 fathoms); obtained also at Station 162.
- Maretia planulata*, Gray. (2 to 15 fathoms); obtained also at Fiji and Admiralty Islands.
- Eupatagus valenciennesii*, Agassiz. (30 to 35 fathoms); obtained also at Station 188, 28 fathoms.
- Echinocardium australe*, Gray. (6 to 15 fathoms); obtained also at Japan, 7 to 50 fathoms.

HOLOTHURIOIDEA (Théel, Zool. pt. 13).

- Chirodota japonica*, Marenzeller. Several specimens (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Japan.
- Cucumaria mirabilis*, n.sp. One specimen (6 to 15 fathoms); obtained also at Philippines, 100 fathoms.
- Colochirus spinosus* (Quoy and Gaimard). Eighteen specimens (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from China and Australia.
- „ *australis*, Ludwig. One specimen (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Phyllophorus* (?) *incompertus*, n.sp. Two specimens (6 to 7 fathoms); obtained at no other locality.

GEPHYREA (Selenka, Zool. pt. 36).

- Phymosoma japonicum*, Grube. Two specimens (shallow water); obtained at no other locality by the Challenger. Recorded from Japan.

ANNELIDA (M'Intosh, Zool. pt. 34).

- Aphrodita australis*, Baird. One specimen (35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.
- Thalenessa fimbriata*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.
- Eunice aphroditois*, Pallas. One specimen (2 to 10 fathoms); obtained also at Philippines. Recorded from Indian Seas.
- Sabellaria* (*Pallasia*) *giardi*, n.sp. One specimen (35 fathoms); obtained at no other locality.
- Sabella fusca*, Grube (?). One specimen (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Ceylon.

PORT JACKSON.

OSTRACODA (Brady, Zool. pt. 3).

Phlyctenophora zealandica, n.g., n.sp. (2 to 10 fathoms); obtained also in Wellington Harbour, N.Z., and Humboldt Bay, New Guinea, 37 fathoms. Only species of the genus.

Pontocypris (?) *subreniformis*, n.sp. (2 to 10 fathoms); obtained also in Simon's Bay, Cape.

Argillacea badia, n.sp. (2 to 10 fathoms); obtained at no other locality.

Macrocypris setigera, n.sp. (2 to 10 fathoms); obtained at no other locality.

Bairdia fusca, Brady. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ *minima*, n.sp. (6 fathoms); obtained also at Station 246, 2050 fathoms.

„ *amygdaloides*, Brady. (2 to 10 fathoms); obtained also at Stations 162, 185, 187, 305, New Guinea, and Sandwich Islands.

Cythere vellicata, n.sp. (2 to 10 fathoms); obtained at no other locality.

„ *demissa*, Brady. (2 to 10 fathoms); obtained at no other locality by the Challenger.

„ *cumulus*, n.sp. (2 to 10 fathoms); obtained at no other locality.

„ *crispata*, Brady. (2 to 10 fathoms); obtained also at Station 187, 6 to 8 fathoms, and Hong Kong Harbour, 7 fathoms. Recorded from European seas. Fossil—European Post-Tertiaries.

„ *canaliculata* (Reuss). (2 to 10 fathoms); obtained also at Station 162.

„ *kerquelenensis*, n.sp. (2 to 10 fathoms); obtained also at Stations 145, 149, and 162.

„ *goujoni*, Brady. (2 to 10 fathoms); obtained also at Station 187, 6 to 8 fathoms, and Hong Kong Harbour, 7 fathoms. Recorded from China Seas.

„ *clavigera*, n.sp. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Mediterranean.

„ *trieristata*, n.sp. (2 to 10 fathoms); obtained also at Admiralty Islands, 16 to 25 fathoms.

Lorococoncha avellana, Brady. (2 to 10 fathoms); obtained also at Station 172, 18 fathoms. Recorded from West Indies.

„ *australis*, n.sp. (2 to 10 fathoms); obtained also at Station 187, 6 to 8 fathoms.

Xestoleberis granulosa, n.sp. (2 to 10 fathoms); obtained also at Station 162.

„ *curta*, Brady. (2 to 10 fathoms); obtained also at Stations 33, 149, 187, 300, and Sandwich Islands.

Cytherura curvistriata, n.sp. (2 to 10 fathoms); obtained at no other locality.

Cytherella pulchra, Brady. (2 to 10 fathoms); obtained also at Stations 33, 167, PORT JACKSON, and 344.

„ *punctata*, Brady (?). (2 to 10 fathoms); obtained also at Stations 135, 167, 191A, and 305.

CIRRIPIEDIA (Hoek, Zool. pt. 25).

Balanus trigonus, Darwin. Two specimens (6 to 15 fathoms); obtained also at Japan, 8 to 50 fathoms.

Tetracrita rosea (Krauss). Two specimens (Sydney Harbour, 6 fathoms); obtained at no other locality by the Challenger.

AMPHIPODA (Stebbing, Zool. pt. 67).

Platyischnopus mirabilis, n.g., n.sp. Two specimens (2 to 10 fathoms); obtained at no other locality. Only species of the genus.

Mæra rubromaculata (Stimpson). One specimen (30 to 35 fathoms), and several specimens (120 fathoms?); obtained also at Station 142.

Elasmopus subcarinata (Haswell). One specimen (30 to 35 fathoms); obtained also at Stations 161 and 168.

Ampelisca acinaces, n.sp. One specimen (35 fathoms); obtained at no other locality.

Platophium inconspicuum, n.sp. One specimen (2 to 10 fathoms); obtained at no other locality.

Phthisica (Proto) *novæ-hollandiæ*, Haswell. Three specimens (2 to 10 fathoms); obtained at no other locality by the Challenger.

ISPODA (Beddard, Zool. pts. 33 and 48).

Serolis elongata, n.sp. One specimen (30 fathoms); obtained at no other locality.

„ *pallida*, n.sp. One specimen (30 to 35 fathoms); obtained also at Station 162.

Ceratocephalus grayanus, White, MS. Numerous specimens (30 to 35 fathoms); obtained also at Station 161.

Bathytanais bathybrotos, n.g., n.sp. Fourteen specimens (2 to 10 fathoms); obtained also at Station 246, 2050 fathoms.

Three other specimens, genera and species undetermined.

MACRURA (Spence Bate, Zool. pt. 52).

Penæus canaliculatus, Olivier, var. *australiensis*, nov. Three specimens (2 to 10 fathoms); the species obtained also at Fiji and Japan.

PORT JACKSON.

Penaeus gracilis, Dana. (Depth not stated); obtained also at New Hebrides.
Recorded from Sulu Sea.

Palaemon affinis, M.-Edwards. Sixteen specimens (depth not stated); obtained at
no other locality by the Challenger.

ANOMURA (Henderson, Zool. pt. 69).

Cryptodromia lateralis (Gray). Two specimens (2 to 10 fathoms); obtained also at
Stations 162 and 163A.

„ *nodulifera*, n.sp. Two specimens (2 to 10 fathoms); obtained at no
other locality.

Latreillia australiensis, n.sp. Two specimens (30 to 35 fathoms); obtained also at
Station 163A.

Lyreidus tridentatus, De Haan. Twelve specimens (30 to 35 fathoms); obtained
also at Station 174, 210 fathoms. Recorded from Japan
and Australia.

Diogenes custos (Fabricius). One specimen (2 to 10 fathoms); obtained at no other
locality by the Challenger. Recorded from Australia to
India.

Pagurus sp. (?). One young specimen (30 to 35 fathoms).

Eupagurus lucertosus, n.sp., var. *nana*, nov. Several specimens in shells of *Ancilla*,
Nassa, *Turritella*, *Pleurotoma*, and *Natica* (35 fathoms);
obtained also at Stations 161 and 162.

Anapagurus australiensis, n.sp. Two specimens, one in shell of *Trochus*
(2 to 10 fathoms); obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Oncinopus aranea, De Haan. One specimen (2 to 10 fathoms); obtained also at
Station 196, 825 fathoms, and Arafura Sea. Recorded
from Japan through Malaysian Seas to New Hebrides.

Gonatorhynchus tumidus, Haswell. One specimen (2 to 10 fathoms); obtained at
no other locality by the Challenger. Recorded from
Australia.

Micippa spinosa, Stimpson. Eight specimens (2 to 15 fathoms); obtained at no
other locality by the Challenger. Recorded from
Australia and New Zealand.

Actæa peronii (M.-Edwards). One specimen (2 to 10 fathoms); obtained also at
Station 162.

Pilumnus vestitus, Haswell. One specimen (shore); obtained at no other locality
by the Challenger. Recorded from Australia.

- Pilumnus rufopunctatus*, Stimpson. One specimen (2 to 10 fathoms); obtained at PORT JACKSON. no other locality by the Challenger. Recorded from Australia.
- Neptunus (Neptunus) sanguinolentus* (Herbst). One specimen (2 to 10 fathoms); obtained also at Ternate and Sandwich Islands.
- Thalamita sima*, M.-Edwards. One specimen (2 to 10 fathoms); obtained also at Station 186, 8 fathoms.
- Platyonychus bipustulatus*, M.-Edwards. Three specimens (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Indo-Malaysia, Australia, New Zealand, and South America.
- Lissocarcinus polybioides*, Adams and White. One specimen (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Indo-Malaysia and Australia.
- Ocypoda* sp. (?). Young specimens (2 to 10 fathoms).
- Pachygrapsus transversus*, Gibbes. One specimen (6 fathoms); obtained also at Bermuda and Cape Verdes.
- Helice crassa*, Dana. One specimen (6 fathoms); obtained at no other locality by the Challenger.
- Sesarma schüttei*, Hess. One specimen (Hawkesbury, N.S.W., brackish water); obtained at no other locality by the Challenger.
- Myctiris platycheles*, M.-Edwards. Several specimens (Botany Bay, beach); obtained at no other locality by the Challenger. Recorded from Australia.
- Halicarcinus ovatus*, Stimpson. One specimen (2 to 10 fathoms); obtained also at Station 161.
- Calappa lophos* (Herbst). One specimen (30 to 35 fathoms); obtained at no other locality by the Challenger.
- „ *depressa*, n.sp. One specimen (2 to 10 fathoms); obtained at no other locality.
- Matuta lævidactyla*, Miers. One specimen (3 fathoms); obtained at no other locality by the Challenger.
- Ebalia tuberculosa* (M.-Edwards). Three specimens (30 to 35 fathoms); obtained also at Stations 142, 162, 163A, and 167.
- „ (*Phlyxia*) *crassipes* (Bell). Several specimens (2 to 35 fathoms); obtained also at Station 162.
- „ („) *undecimspinosus* (Kinahan), var. *orbicularis*, Haswell. Numerous specimens (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.

PURE JACULIN.

Ebulia (*Phlyxia*) *quadridentata*, Gray, var. *spinifera*, nov. One specimen (6 fathoms); obtained at no other locality. The species recorded from Australia.

„ („) *dentifrons*, n.sp. Two specimens (2 to 10 fathoms); obtained at no other locality.

Philyra platycheira, De Haan (?). One specimen (2 to 10 fathoms); obtained at no other locality by the Challenger.

Leucosia australiensis, n.sp. Two specimens (2 to 10 fathoms); obtained at no other locality.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Corbula tunicata, Hinds. Several specimens (4 to 18 fathoms); obtained also at Station 189 and Amboina, 15 to 25 fathoms.

Neara brazieri, n.sp. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Mactra (*Mactrinula*) *depressa*, Reeve. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ *pusilla*, Adams. (4 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ *jacksoniensis*, n.sp. (2 to 10 fathoms); obtained at no other locality.

Myochama anomoioides, Stutchbury. On *Pectunculus holosericus* and *Trigonia* (2 to 10 fathoms); obtained also at Station 162.

Myodora pandoriformis (Stutchbury). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ *brevis* (Sowerby). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand, Australia, and Tasmania.

„ *crassa* (Stutchbury). Four odd valves (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ *australica* (Reeve). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ *angustata* (Angas). (2 to 10 fathoms); obtained at no other locality by the Challenger.

Thracia modesta (Angas). Single valve (2 to 10 fathoms); obtained at no other locality by the Challenger.

Saricara arctica, Linné. (2 to 10 fathoms); for distribution see Station 75.

Solen sloani, Gray. (2 to 10 fathoms); obtained at no other locality by the Challenger.

- Errilia bisculpta*, Gould. (2 to 10 fathoms); obtained also at Sandwich Islands. PORT JACKSON.
Recorded from Japan and Philippines.
- Psammobia zonalis* (Lamarek). (4 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Amboina, Java, Philippines, and Tasmania.
- „ *modesta*, Deshayes. Single valve (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Tellina* (——?) *tenuilirata*, Sowerby. (2 to 10 fathoms); obtained also in Torres Strait and Fiji. Recorded from Australia.
- „ (——?) *semitorta*, Sowerby. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Donax nitidus*, Deshayes. (6 to 15 fathoms); obtained also at Station 187, 6 fathoms. Recorded from Australia.
- Tapes* (*Paratapes*) *textrix* (Chemnitz). (4 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Indian Ocean.
- „ (*Amygdala*) *fabagella*, Deshayes. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Lake Macquarie and Tasmania.
- Venus* (*Chione*) *calophylla*, Philippi. (4 to 18 fathoms); obtained also at Stations 187 and 203, 3 to 28 fathoms. Recorded from China.
- „ („) *jacksoni*, n.sp. (4 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *striatissima*, Sowerby. (2 to 10 fathoms); obtained also at Station 162.
- „ (*Leukoma*) *australis*, Sowerby. (5 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Cytherea* (*Callista*) *disrupta*, Sowerby. (2 to 10 fathoms); obtained at no other locality by the Challenger.
- Circe scripta* (Linné). (4 to 18 fathoms); obtained also in Torres Strait, 3 to 11 fathoms. Recorded from Red Sea through the Indian Ocean to Moluccas.
- „ *angasi*, n.n. (2 to 10 fathoms); obtained at no other locality by the Challenger.
- Dosinia circinaria*, Deshayes. (6 to 7 fathoms); obtained at no other locality by the Challenger. Original locality unknown.

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- Cardium* (*Bucardium*) *tenuicostatum*, Lamarck. (2 to 10 fathoms); obtained also at Station 208, 18 fathoms. Recorded from Philippines, Australia, and Tasmania.
- „ („) *pulchellum*, Gray. (2 to 10 fathoms); obtained also at Stations 161 and 162.
- Chama spinosa*, Broderip. One specimen (depth not stated); obtained at no other locality by the Challenger. Recorded from Lord Hood's Island.
- Lucina ramsayi*, n.sp. (6 to 7 fathoms); obtained at no other locality.
- „ (*Loripes*?) *jacksoniensis*, n.sp. One specimen (6 to 15 fathoms); obtained at no other locality.
- Diplodonta* sp. (?). Single valve (2 to 10 fathoms).
- Kellia rotunda* (Deshayes), var. (?). One specimen (depth not stated); obtained also at Station 162.
- „ *adamsi* (Angas). Single valve (2 to 10 fathoms); obtained at no other locality by the Challenger.
- Montacuta angasi*, n.sp. Single valve (2 to 10 fathoms); obtained at no other locality.
- Cardita excavata*, Deshayes. (2 to 10 fathoms); obtained at no other locality by the Challenger.
- „ sp. (?). Single valve (2 to 10 fathoms).
- Carditella angasi*, n.sp. (35 fathoms); obtained at no other locality.
- Trigonia lamarekii*, Gray. (2 to 10 fathoms); obtained at no other locality by the Challenger.
- Pectunculus holosericus*, Reeve. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *striatularis*, n.sp. (?) (Lamarck?), Reeve. (6 to 7 fathoms); obtained also at Station 212, 10 fathoms. Recorded from Australia.
- Lamopsis brazieri*, Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger.
- Arca* (*Borbatia*) *fasciata*, Reeve. (2 to 10 fathoms); obtained at no other locality by the Challenger.
- „ (*Scapharca*) *gubernaculum*, Reeve. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- Mytilus hirsutus*, Lamarck. (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand to China and Japan.

- Modiola glaberrima* (Dunker). (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Sydney. PORT JACKSON.
- Modiolaria lanigera* (Dunker). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *cumingiana*, Dunker. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Red Sea.
- „ *varicosa*, Gould. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Sydney.
- „ *cuneata*, Gould. (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from the Cape.
- Lima multicostata*, Sowerby. (2 to 18 fathoms); obtained also at Stations 56 and 172.
- „ *angulata*, Sowerby. (2 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Panama, Bay of Carracas, Philippines, and Port Lincoln.
- „ (*Limatula*) *bullata* (Born). (2 to 10 fathoms); obtained also at Station 162.
- Pecten (Janira) fumatus*, Reeve. (2 to 18 fathoms); obtained at no other locality by the Challenger.

GASTEROPODA (Watson, Zool. pt. 42).

- Patella alticostata*, Angas. (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *tramoserica*, Martyn. (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Emarginula (Tugalia) parmophoidea*, Quoy and Gaimard. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.
- „ (*Hemitoma*) *rugosa*, Quoy and Gaimard. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.
- „ (*Scutus*) *anatina* (Donovan). (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Haliotis nævosa*, Martyn. (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Trochus (Clanculus) clangulus*, Wood. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.

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- Trochus* (*Clanculus*) *homalomphalus*, Adams. (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *maugeri*, Wood. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *floridus*, Philippi. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Ireland.
- „ (*Euchelus*) *baccatus* (Menke). (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Solomon Islands, and Singapore.
- „ (*Ziziphinus*) *decoratus*, Philippi. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Elenchus*) *badius*, Wood. (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.
- „ (*Bankivia*) *fusciatus* (Menke). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Leiopyrga*) *picturatus* (Adams). (2 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Trochocochlea*) *fuliginus*, Adams. (2 to 10 fathoms); obtained at no other locality by the Challenger. Original locality unknown.
- „ (*Solariella*) *prodictus*, Fischer. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Sandwich Islands.
- („) *vitiliginus*, Menke. (2 to 10 fathoms); obtained also at Station 186, 8 fathoms. Recorded from Australia to Philippines and Japan.
- „ („) *albugo*, n.sp. (2 to 10 fathoms); obtained at no other locality.
- „ , two other species undetermined (2 to 10 fathoms).
- Stomatella imbricata*, Lamarek. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Gena*) *nigra*, Quoy and Gaimard. (2 to 10 fathoms); obtained also at Fernando Noronha.
- Schismope carinata*, n.sp. (6 to 15 fathoms); obtained also at Station 185, 155 fathoms.

- Turbo (Ninella) staminea* (Martyn). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia. PORT JACKSON.
- Turbo (Uvanilla) tentoriiformis* (Jonas). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Nerita punctata*, Quoy and Gaimard. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand, Australia, and Indian Ocean.
- Solarium (Architectonica) reevei*, Hanley. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *(Torinia) rosulentum*, n.sp. One specimen (35 fathoms); obtained at no other locality.
- Scalaria aculeata*, Sowerby. (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from China to Australia.
- „ *jukesiana*, Forbes. One specimen (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Purpura (Cronia) amygdala*, Kiener. (2 to 10 fathoms); obtained also at Cape York, 3 to 12 fathoms. Recorded from Australia.
- Nassa (Niotha) pauperata* (Lamarck). (2 to 35 fathoms); obtained also at Stations 161 and 162.
- „ *(Alectryon) glans* (Linné), var. *suturalis* (Lamarck). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines to Mauritius.
- „ *(Hima) paupera*, Gould. (35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, New Guinea, and Pacific Islands.
- Fusus colosseus*, Lamarck (?). (Locality uncertain, but either Arafura Sea or Australia). Recorded from Indian Ocean and Philippines.
- „ *hanleyi* (Angas). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Cominella (Adamsia) typica*, Dunker. (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Australia.
- Eburna (Zemira) australis*, Sowerby. (6 to 7 fathoms); obtained also at Station 162.
- Oliva (Olivella) leucozona*, Adams and Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Ireland.

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- Oliva (Olivella) nympha*, Adams and Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Ancilla (Amalda) oblonga* (Sowerby). (2 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Columbella (Mitrella) albomaculata*, Angas. (Depth not stated); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *australis*, Gaskoin. (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Atilia*) *filosa*, Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *puella*, Sowerby. One specimen (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines to Mauritius.
- „ , three other species undetermined. (2 to 10 fathoms).
- Mitra (Nebularia) rhodia*, Reeve. (2 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Marginella (Glabella) turbinata*, Sowerby. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *agapeta*, n.sp. (35 fathoms); obtained at no other locality.
- „ (*Persicula*) *ovulum*, Sowerby. (2 to 10 fathoms); obtained also at Station 162.
- „ sp. (?). (2 to 10 fathoms).
- Cancellaria undulata*, Sowerby. One specimen (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Tasmania, and Philippines.
- Pleurotoma xanthophaës*, n.sp. (30 to 35 fathoms); obtained at no other locality.
- „ (*Drillia*) *metcalfei*, Angas. (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *spadix*, n.sp. (35 fathoms); obtained at no other locality.
- „ (*Crassispira*) *owenii*, Gray. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Africa, Australia, and Tonga Islands.
- „ sp. (?). (30 to 35 fathoms).
- Terebra (Myurella) bicolor* (Angas). (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

- Conus (Leptoconus) jukesii*, Reeve. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia. PORT JACKSON
- Triton (Simpulum) costatus* (Born). (2 to 10 fathoms); obtained at no other locality by the Challenger. A widely-distributed species. Fossil—Upper Miocene of Calabria onwards.
- „ (*Cabestana*) *spengleri* (Chemnitz). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.
- Ranella (Argobuccinum) leucostoma*, Lamarck. (2 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Cassis (Semicassis) pila*, Reeve. (2 to 10 fathoms); obtained also at Stations 188 and 203, 12 to 28 fathoms. Recorded from China, Japan, and Torres Strait.
- „ sp. (?). (2 to 10 fathoms).
- Struthiolaria scutulata* (Martyn). (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.
- Natica euzona*, Recluz. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ *sagittata*, Menke. (6 to 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Pacific Islands.
- „ *effossa*, n.sp. (30 to 35 fathoms); obtained also at Station 161.
- „ (*Neverita*) *conica*, Lamarck. (2 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *didyma*, Bolten. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from the whole Indian Ocean, Australia, New Guinea, and Japan.
- Crepidula aculeata* (Gmelin). (2 to 10 fathoms); obtained also at Station 233, 8 to 50 fathoms. A widely-distributed species.
- Calyptræa calyptræformis* (Lamarck). (2 to 15 fathoms); obtained also at Station 162.
- Turritella sinuata*, Reeve. (2 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ sp. (?). (2 to 10 fathoms).
- Odostomia (Parthenia) casta* (Adams). (2 to 10 fathoms); obtained also at Station 162.

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Odostomia (Turbonilla) scalpidens, n.sp. (2 to 10 fathoms); obtained at no other locality.

„ sp. (?). (2 to 10 fathoms).

Mathilda (Cingulina) spina (Crosse and Fischer). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Eulima dissimilis, n.sp. (2 to 10 fathoms); obtained at no other locality.

Cerithium (Lampania) australe, Quoy and Gaimard. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Tasmania, and China.

Bittium granarium (Kiener). (2 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Timor and Australia.

„ *cylindricum*, n.sp. (2 to 10 fathoms); obtained at no other locality.

„ *furvum*, n.sp. (2 to 10 fathoms); obtained at no other locality.

Alaba (Diala) phasianella, Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

„ („), n.sp. (2 to 10 fathoms).

Rissoa (Scrobs) scrobiculator, n.sp. (2 to 10 fathoms); obtained at no other locality.

„ („) *badia*, n.sp. (2 to 10 fathoms); obtained at no other locality.

„ , two other species undetermined. (2 to 10 fathoms).

Rissoina cincta, Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Actæon (Buccinulus) affinis (Adams). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from China and Japan to Australia.

„ („) *niveus*, Angas. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Aplustrum scabrum (Chemnitz). (2 to 18 fathoms); obtained at no other locality by the Challenger. Recorded from Sandwich Islands to Australia and Mauritius.

Ringicula doliaris, Gould. (2 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Japan.

Bulla ampulla, Linné. (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines, Australia, and Indian Ocean. Fossil—shores of the Red Sea.

„ *australis*, Quoy and Gaimard. (2 to 10 fathoms); obtained also at Fiji, 12 fathoms. Recorded from Australia to Galapagos.

- Utriculus (Tornatina) avenarius*, n.sp. Ten specimens (2 to 10 fathoms); obtained at no other locality. PORT JACKSON.
- „ sp. (?). (2 to 10 fathoms).
- Cylichna arachis* (Quoy and Gaimard). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Tasmania, New Zealand, and New Guinea.
- „ *cuticulifera* (Smith). (2 to 15 fathoms); obtained also at Fiji, 12 fathoms. Recorded from Australia and New Zealand.
- Philine angasi* (Crosse). (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ , two other species undetermined. (2 to 15 fathoms).
- Assimineea* sp. (?). (2 to 10 fathoms).
- Buccinum*, two species undetermined. (2 to 15 fathoms).
- Cithara* (?) sp. (2 to 10 fathoms).
- Cyclostrema*, three species undetermined. (2 to 10 fathoms)
- Jeffreysia* sp. (?). (2 to 10 fathoms).
- Pleurobranchus* sp. (?). (6 to 15 fathoms).
- Pyrgula* (?) sp. (2 to 10 fathoms).
- Scissurella*, n.sp. (?). (2 to 10 fathoms).
- Skenea* (?) sp. (2 to 10 fathoms).
- Triforis* sp. (?). (2 to 10 fathoms).
- New genus (?). (2 to 10 fathoms).

POLYPLACOPHORA (Haddon, Zool. pt. 43).

- Callochiton platessa* (Gould). One specimen (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.
- Ischnochiton longicymba* (Blainville). Three specimens (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.
- „ *fruticosus* (Gould). Six specimens (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Lepidoradsia australis* (Sowerby). Several specimens (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Callistochiton antiquus* (Reeve). (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Chiton jugosus*, Gould. Two specimens (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

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- Acanthopleura* (?) *incana* (Gould). One specimen (6 fathoms); obtained also at Japan. Recorded from Australia and New Zealand.
- Lorica volvox* (Reeve). (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.
- Cryptoplax striatus* (Lamarck). Eight specimens (6 to 15 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.

NUDIBRANCHIATA (Bergh, Zool. pt. 26).

- Rizzolia australis*, n.sp. One specimen (2 to 20 fathoms); obtained at no other locality.
- Chromodoris runcinata*, Bergh. One specimen (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Philippine Sea.

CEPHALOPODA (Hoyle, Zool. pt. 44).

- Octopus australis*, n.sp. Two specimens (6 to 15 fathoms); obtained at no other locality.
- „ *pictus*, Brock, var. *fasciata*, nov. One specimen (6 to 15 fathoms); obtained at no other locality. The species recorded from Australia.

POLYZOA (Busk, Zool. pts. 30 and 50; Waters, pt. 79).

- Catenicella plagiostoma*, Busk. (35 fathoms); obtained also at Station 163A.
- „ *umbonata*, Busk, var. (?). (35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.
- „ *pulchella*, Maplestone. (35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Flustra membraniporides*, n.sp. (35 fathoms); obtained also at Station 162.
- Diachoris magellanica*, Busk. (2 to 10 fathoms); obtained also at Station 315, 5 to 12 fathoms. Recorded from Australia, New Zealand, Kerguelen, Magellan Strait, and Adriatic.
- Salicornaria clavata*, n.sp. (35 fathoms); obtained also at Stations 145, 149, 151, 162, and 304. [Waters calls it *Cellaria australis*, MacGillivray].
- Retepora jacksoniensis*, n.sp. (2 to 10 fathoms); obtained at no other locality. [Waters calls it *Retepora avicularis*, MacGillivray].
- Cribrilina monoceros* (Busk). (35 fathoms); for distribution see Station 145.
- Lepralia tuberosa*, n.sp. (35 fathoms); obtained at no other locality.

- Schizoporella jacksoniensis*, n.sp. (35 fathoms); obtained at no other locality. PORT JACKSON.
- Cellepora tuberculata*, n.sp. (35 fathoms); obtained at no other locality.
- „ *jacksoniensis*, n.sp. (35 fathoms); obtained at no other locality.
- „ *apiculata*, n.sp. (35 fathoms); obtained at no other locality.
- „ *bidenticulata*, n.sp. (35 fathoms); obtained also at Station 162 (var. *subæqualis*).
- Idmonea australis*, MacGillivray. (30 to 35 fathoms); obtained also at Station 145.
- Hornera foliacea*, MacGillivray. (35 to 38 fathoms); obtained also at Station 161.
- Selenaria maculata*, Busk. (30 to 35 fathoms); obtained at no other locality by the Challenger. Recorded from Australia. Fossil—Australia.

BRACHIOPODA (Davidson, Zool. pt. 1).

- Waldheimia flavescens*, Val. apud Lamarek. Numerous specimens (shore to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Tasmania.
- Magasella cumingi* (Davidson). Four valves (2 to 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand (?).
- Kraussina lamarekiana*, Davidson. Five specimens attached to *Waldheimia flavescens* (shore); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand.

TUNICATA (Herdman, Zool. pts. 17 and 38).

- Molgula forbesi*, n.sp. One specimen (2 to 10 fathoms); obtained at no other locality.
- Cynthia cerebriformis*, n.sp. One specimen (30 to 35 fathoms); obtained at no other locality.
- „ *irregularis*, n.sp. One specimen (2 to 10 fathoms); obtained at no other locality.
- „ *complanata*, n.sp. One specimen (6 fathoms); obtained at no other locality.
- Styela gyrosa* (Heller). Numerous specimens (6 fathoms); obtained at no other locality by the Challenger. Recorded from Mediterranean.
- „ *exigua*, n.sp. One specimen (2 to 10 fathoms); obtained at no other locality.
- Polycarpa viridis*, n.sp. Ten specimens (2 to 15 fathoms); obtained at no other locality.
- „ *tinctor* (Quoy and Gaimard). Twelve specimens (2 to 15 fathoms); obtained at no other locality by the Challenger.

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- Polycarpa longisiphonica*, n.sp. Three specimens (6 to 15 fathoms); obtained at no other locality.
- „ *radicata*, n.sp. One specimen (6 fathoms); obtained also at Station 163A.
- Ascidia pyriformis*, n.sp. Two specimens (6 fathoms); obtained at no other locality.
- Colella elongata*, n.g., n.sp. One specimen (30 fathoms); obtained at no other locality.
- Polyclinum fungosum*, n.sp. One specimen (6 to 15 fathoms); obtained at no other locality.
- Psammoplidium spongiforme*, n.g., n.sp. One specimen and fragments (7 fathoms); obtained at no other locality.
- Leptoclinum* (?) *jacksoni*, n.sp. One specimen (6 to 15 fathoms); obtained at no other locality.

FISHES (Günther, Zool. pts. 6 and 57).

- Sebastes percoides*, Rich. (30 fathoms); obtained also at Station 163A.
- Centropogon australis*, White. (Depth not stated); obtained at no other locality by the Challenger.
- Gobius brevifilis*, Day. (Depth not stated); obtained at no other locality by the Challenger.
- „ *albopunctatus*, C.V. (Depth not stated); obtained also at Cape York.
- Callionymus lunatus*, Schleg. (6 to 8 fathoms); obtained also at Japan.
- Blennius tasmanianus*, Rich. (Depth not stated); obtained at no other locality by the Challenger.
- Tripterygium* sp. (?). (Depth not stated).
- Lophonectes gallus*, n.g., n.sp. (30 fathoms); obtained also at Station 162.
- Chiloglanis megastoma*, Rich. (Depth not stated); obtained at no other locality by the Challenger.
- Muranichthys gymnotus*, Bleeker (?). (Depth not stated); obtained at no other locality by the Challenger.
- Syngnathus superciliaris*, n.sp. (4 to 6 fathoms); obtained at no other locality.
- Urocampus calohrynchus*, Günther. (Depth not stated); obtained at no other locality by the Challenger.
- Gonostoma microdon*, n.sp. One specimen (depth not stated); for distribution see Station 23.

In the foregoing list 399 species are enumerated, of which 123 are new to science, including representatives of 10 new genera; 97 of the new species and 3 new genera were not obtained elsewhere.

With reference to these shallow-water dredgings near Sydney, Willemoes-Suhm PORT JACKSON. writes: "The Phyllopods of the neighbourhood of Sydney belong to the genera *Limnadia* and *Limnetis*, and are especially interesting because *Limnadia*, which was first found in some parts of Europe, is constantly parthenogenetic. The male of *Limnadia* is known only from the Australian species, as described by Claus; and Kreeft says that males and females are constantly found together here except in the wet season, as now, when no animals, only shells, could be got. Among the Crustacea taken in the dredgings on June 3, I found two species of *Serolis*, one of which had not been taken before, many Sphæromata, a long *Stenorhynchus*, and a *Ranina*-like crab."

Surface Organisms.—The following species are recorded in the Zoological Reports ORGANISMS FROM from the surface and down to 50 fathoms in the neighbourhood of Sydney :— SURFACE-NETS.

COPEPODA (Brady, Zool. pt. 23).

- Calanus gracilis*, Dana.
- „ *tonsus*, n.sp.
- „ *valgus*, n.sp.
- Eucalanus attenuatus* (Dana).
- „ *setiger*, n.sp.
- Pleuromma abdominale* (Lubbock).
- Leuckartia flavicornis*, Claus.
- Undina vulgaris*, Dana.
- „ *darwinii*, Lubbock.
- Scolecithrix danæ* (Lubbock).
- Euchaeta prestandreæ*, Philippi.
- Ætidius armatus*, n.g., n.sp.
- Temora dubia* (Lubbock).
- Centropages furcatus* (Dana).
- Candace pachydactyla*, Dana.
- „ *pectinata*, Brady.
- Pontella acuta* (Dana).
- „ *acutifrons* (Dana).
- „ *plumata* (Dana).
- Oithona challengerii*, n.sp.
- Corycaeus varius*, Dana.
- „ *venustus*, Dana.
- Oncæa obtusa* (Dana).
- Saphirina splendens*, Dana.
- „ *inæqualis*, Dana.

AMPHIPODA (Stebbing, Zool. pt. 67).

- Phrosina australis*, n.sp.
- Anchylomera* sp. (?).
- Primno latreillei*, n.sp.
- Phorcorrhaphis edwardsi*, n.sp. (Off Australia).
- Tetrathyrus moncauri*, n.sp.
- Parascelus parvus*, Claus.

SCHIZOPODA (Sars, Zool. pt. 37).

- Euphausia latifrons*, n.sp.
- Nictyphanes australis*, n.g., n.sp.
- Thysanoëssa gregaria*, n.sp.

MACRURA (Spence Bate, Zool. pt. 52).

- Sergestes armatus*, Krøyer.
- Lucifer typus*, Thompson.
- Anebocaris quadroculus*, n.g., n.sp.
- Leptochela robusta*, Stimpson.

PTEROPODA (Pelseneer, Zool. pt. 65).

- Clio (Styliola) subula* (Quoy and Gaimard).

TUNICATA (Herdman, Zool. pt. 76).

- Doliolum denticulatum*, Quoy and Gaimard (?).
- Salpa democratica - mucronata*, Forskåhl.

ORGANISMS FROM
SURFACE-NETS.

In addition, the following are recorded in the note-books:—Diatoms, Radiolaria, *Diphyes*, *Sagitta*, larvæ of Annelids, *Themisto*, Phoroninids, larvæ of Squillids, Decapod larvæ (Nauplii and Zoëæ), *Appendicularia*, larvæ of Ascidians.

A fine tow-net put over the stern of the ship in the harbour on June 10 and 11 procured Foraminifera (*Globigerina*, *Cristellaria*, and *Rotalia*, the last two genera having been evidently washed up from the bottom by tidal currents), Acanthometræ, *Sagitta*, many Copepods, larvæ of Cirripeds, *Lucifer*, young Lamellibranchs, larvæ of Ascidians in the tailed condition and in the egg (which Murray thought might be the larvæ of *Appendicularia*, seeing it was also present in the net, while Willemoes-Suhm thought they were the larvæ of *Ascidia*).

STATIONS 163C
TO 164C

Stations 163c to 164c, off Sydney (see Chart 26 and Diagram 11).

June 12 and 13, 1874.

At 6 A.M. on June 12 got up steam, and at 7.30 A.M. weighed anchor and proceeded out of the harbour through the West Channel. At 11.10 A.M., $14\frac{1}{2}$ miles from the shore, sounded in 85 fathoms, deposit Hard Ground, shells, bottom temperature $62^{\circ}2$ (Station 163c). At noon, $18\frac{3}{4}$ miles from shore, stopped and sounded in 120 fathoms, deposit Green Sand (Station 163D). At 1 P.M., $23\frac{1}{2}$ miles from shore, stopped and sounded in 290 fathoms, deposit Green Sand (Station 163E). At 2.15 P.M., $30\frac{1}{2}$ miles from shore, stopped and sounded in 650 fathoms, deposit Green Mud, containing 47.32 per cent. of carbonate of lime, bottom temperature $40^{\circ}8$ (Station 163F). At 4.30 P.M., $39\frac{1}{2}$ miles from shore, stopped and sounded in 950 fathoms, deposit Green Mud, containing 48.15 per cent. of carbonate of lime, bottom temperature $36^{\circ}5$ (Station 164). At 5.30 P.M. made sail. During the night it blew hard from E. and N.N.E.

At 6 A.M. on June 13 got up steam, and at 6.45 A.M. shortened and furled sail and proceeded under steam. Sounded in 1200 fathoms, deposit Green Mud, containing 46.59 per cent. of carbonate of lime (Station 164A). At 8.30 A.M. proceeded to the W. At 9 A.M. observed land ahead. At 11 A.M. stopped and sounded in 410 fathoms, deposit Green Mud, containing 50.31 per cent. of carbonate of lime (Station 164B). At 11.45 A.M. put over trawl, which came up at 2 P.M. with a few specimens. At 3 P.M. sounded in 400 fathoms, deposit Green Mud, bottom temperature $40^{\circ}0$ (Station 164C). Obtained serial temperatures down to the bottom, and lowered dredge, which came up at 5 P.M. with numerous specimens.

Distance at noon from Cape Farewell, New Zealand, 1088 miles. Made good 16 miles. Amount of current 33 miles, direction S.



SOUNDINGS AND STATUTES
in the vicinity of
RAINE ISLET

135 Raine Islet
150 (S)
154 (S)

North end of the
Great Detached Reef

SYDNEY TO WELLINGTON
touching at
PORT HARDY AND Q. CHARLOTTE SF
WELLINGTON TO FIJI 1st
touching at
TONGATABU
and
FIJI 1st TO C. YORK
touching at
API I AND RAINE ISLET
June, July, August, 1874
For explanation of abbreviations see Appendix I.

NEW ZEALAND
NORTH ISLAND
Cook Strait
Port Hardy
Gulf of Cook

Long. 150° from Greenwich 150° Long. West from Greenwich

ORGANISMS FROM
SURFACE-NETS.

STATIONS 163-
to 164.



The following species are recorded in the Zoological Reports from the trawl and dredge at Stations 164B and 164C, 410 and 400 fathoms :—

STATIONS 164B
AND 164C.
ANIMALS FROM
TRAWL AND
DREDGE.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Pachychalina megalorrhaphis, n.sp. One specimen (120 fathoms ?); obtained at no other locality.

Tedania massa, n.sp. One specimen (120 fathoms ?); obtained also at Stations 313 and 320, 55 and 600 fathoms.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Thena grayi, n.sp. Three specimens; obtained at no other locality. Inhabited by a commensal Hydroid.

PENNATULIDA (Köl liker, Zool. pt. 2).

Pennatula moseleyi, n.sp. One specimen (950 fathoms ?); obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Stephanotrochus platypus, n.g., n.sp. Two specimens; obtained at no other locality.

CRINOIDEA (Carpenter, Zool. pt. 60).

Eudiocrinus semperi, n.g., n.sp. One specimen (950 fathoms ?); obtained also at Station 169, 700 fathoms.

Antedon spinicirra, n.sp. Five specimens (950 fathoms ?); obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Pontaster subtuberculatus, n.g., n.sp. (950 fathoms ?); obtained at no other locality.

Plutonaster ambiguus, n.g., n.sp. (950 fathoms ?); obtained at no other locality.

Psilaster acuminatus, n.g., n.sp. (950 fathoms ?); obtained also at Station 167, 150 fathoms, and Simon's Bay, Cape.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha palliata, n.sp. Obtained at no other locality.

„ *irrorata*, n.sp., young (?). Obtained also at Station 143.

„ *jejuna*, n.sp. Obtained also at Station 135.

Ophiomastus tegulitiis, n.g., n.sp. (950 fathoms ?); obtained also at Stations 165, 166, and 218, 275 to 2600 fathoms.

Ophiactis hirta, n.sp. Obtained at no other locality.

STATIONS 164B
AND 164C.

Ophiacantha stimulea, n.sp. (950 fathoms?); obtained at no other locality.
,, sp. (?).

ECHINOIDEA (Agassiz, Zool. pt. 9).

Porocidaris elegans, n.sp. Obtained also at Station 214, 500 fathoms.

Phormosoma hoplacantha, Wyville Thomson, n.sp. Obtained also at Stations 235
and 300, 565 and 1375 fathoms.

Prionechinus sagittiger, n.g., n.sp. (950 fathoms?); obtained also at Stations 207
and 218, 700 and 1070 fathoms. Only species of
the genus.

Fibularia australis, Desmoulins. (950 fathoms?); obtained also at Port Jackson.

HOLOTHURIOIDEA (Théel, Zool. pt. 13).

Latmogone violacea, n.g., n.sp. Two specimens (950 fathoms?); obtained at no
other locality by the Challenger. Recorded subsequently
from Faroe Channel ("Knight Errant").

Pannychia moseleyi, n.g., n.sp. One specimen (950 fathoms?); obtained also at
Station 169, 700 fathoms. Only species of the genus.

OSTRACODA (Brady, Zool. pt. 3).

Bairdia victrix, Brady. For distribution see Station 24.

Cythere dictyon, n.sp. Widely distributed (see Station 24).

,, *dasyderma*, n.sp. Widely distributed (see Station 5).

Krithe producta, n.sp. Widely distributed (see Station 70).

CIRRIPEDIA (Hoek, Zool. pt. 25).

Pacilasma gracile, n.sp. One specimen; obtained at no other locality.

Alepas pedunculata, n.sp. Several specimens on spines of *Phormosoma hoplacantha*;
obtained at no other locality.

Sculpellum intermedium, n.sp. One specimen; obtained also at Station 169,
700 fathoms.

,, *elongatum*, n.sp. Obtained also at Stations 135 and 169.

LEPODA (Beddard, Zool. pt. 33).

Serolis bromleyana, Willemoes-Suhm, n.sp. Obtained also at Stations 156, 168,
and 169.

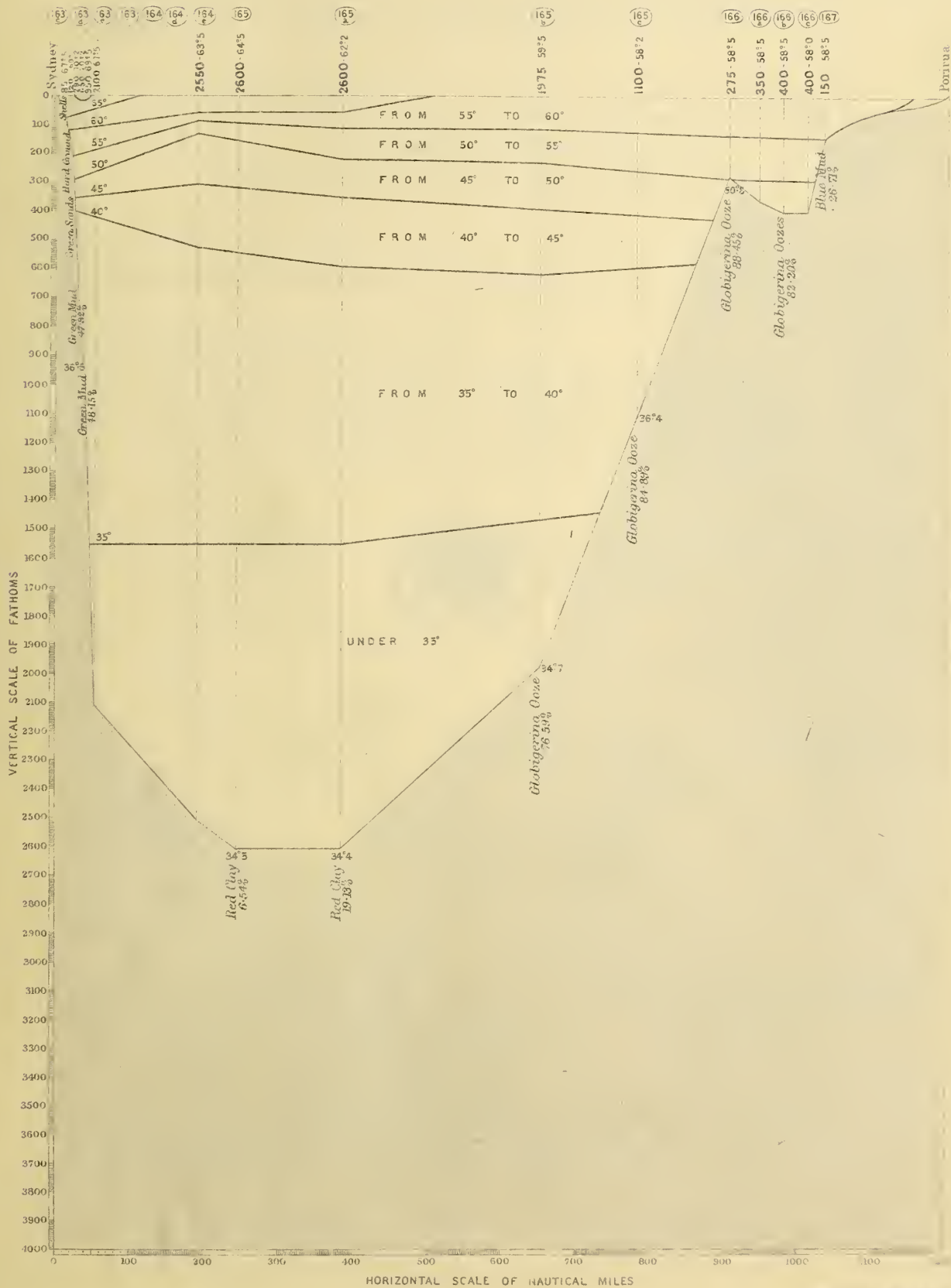
Two other specimens, genus and species undetermined.

PACIFIC OCEAN

Longitudinal Temperature Section

Sydney, New South Wales, to Porirua, Cook Strait, New Zealand.

For explanation of Symbols see Appendix 1.





MACRURA (Spence Bate, Zool. pt. 52).

STATIONS 164B
AND 164C.

Plesionika semilævis, n.g., n.sp. Two specimens (1200 fathoms?); obtained also at Stations 170, 173, and 200, 250 to 520 fathoms.

ANOMURA (Henderson, Zool. pt. 69).

Uroptychus australis, n.sp. Three specimens; obtained also at Stations 170, 171, and 194A, 360 to 600 fathoms.

„ *gracilimanus*, n.sp. One specimens; obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Lispognathus thomsoni (Norman). One specimen; obtained also at Station 142.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Neæra angasi, n.sp. One specimen; obtained at no other locality.

Leda inopinata, n.sp. (950 fathoms?); obtained at no other locality.

„ *ramsayi*, n.sp. (950 fathoms?); obtained at no other locality.

Lima murrayi, n.sp.

„ *australis*, n.sp.

Pecten challengeri, n.sp.

Nucula umbonata, n.sp.

„ *dilecta*, n.sp.

Tellimya subacuminata, n.sp.

[See Smith, *Proc. Zool. Soc. Lond.*, 1891,
pp. 442-444].

GASTEROPODA (Watson, Zool. pt. 42).

Trochus (Gibbula) glyptus, n.sp. One specimen; obtained at no other locality.

Solarium atkinsoni, Smith, n.sp. } [See *Proc. Zool. Soc. Lond.*, 1891,
Scalaria distincta, Smith, n.sp. } pp. 441-442].

Trophon carduelis, n.sp. Obtained at no other locality.

Fusus pagodoides, n.sp. Obtained at no other locality.

Mitra miranda, Smith, n.sp.

Marginella carinata, Smith, n.sp.

„ *brazieri*, Smith, n.sp.

Cancellaria exigua, Smith, n.sp.

Pleurotoma (Drillia) challengeri, Smith, n.sp.

„ („) *crossei*, Smith, n.sp.

„ („) *hoylei*, Smith, n.sp.

„ („) *watsoni*, Smith, n.sp.

[See *Proc. Zool. Soc. Lond.*, 1891,
pp. 438-440].

Nassaria campyla, n.sp. Obtained at no other locality.

STATIONS 164B
AND 164C.

<i>Odostomia</i> (<i>Turbonilla</i>) <i>fischeri</i> , Smith, n.sp.	} [See <i>Proc. Zool. Soc.</i> <i>Lond.</i> , 1891, pp. 441- 442].
" (") <i>consanguinea</i> , Smith, n.sp.	
" (") <i>constricta</i> , Smith, n.sp.	
<i>Bulla incommoda</i> , Smith, n.sp.	
<i>Cylichna ordinaria</i> , Smith, n.sp.	

TUNICATA (Herdman, Zool. pts. 17 and 38).

Styela radicata, n.sp. (?). One specimen (120 fathoms?); obtained also at Station 162.

Colella murrayi, n.g., n.sp. Two specimens (120 fathoms?); obtained at no other locality.

Excluding Protozoa, about 100 specimens of invertebrates were obtained at these Stations, belonging to 67 species, of which 62 are new to science, including representatives of 11 new genera; 43 of the new species were not obtained elsewhere.

Willemoes-Suhm writes: "The Cirripedia attached to *Porocidaris* and *Phormosoma* belong both to the Lepadidæ, the one on the former being a true *Lepas*, while those on the latter are cutaneous and probably belong to *Alepas*. A young specimen of *Serolis bromleyana* was brought up—a remarkable fact, seeing that this species was taken in nearly 2000 fathoms near the Ice Barrier; *Spharoma*, *Galathea*, and some Caridids were also obtained."

ORGANISMS FROM
THE DEPOSITS.

The following species of Pteropoda and Foraminifera were observed in the deposits (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.):—

PTEROPODA (Pelseneer, Zool. pt. 65).—From 950 fathoms (Station 164).

Clio (*Styliola*) *subula* (Quoy and Gaimard).
" *pyramidata*, Linné.
Cavolinia trispinosa (Lesueur).

FORAMINIFERA (Brady, Zool. pt. 22).—From 410 fathoms (Station 164B); the pelagic species, which make up about 70 per cent. of the carbonate of lime present in the deposit, are marked thus x.

<i>Bulbulina bulloides</i> , d'Orbigny.	<i>Spiroloculina limbata</i> , d'Orbigny.
" <i>comata</i> , Brady.	" <i>robusta</i> , Brady.
" <i>depressa</i> , d'Orbigny.	" <i>tenuis</i> (Czjzek).
" <i>ringens</i> (Lamarck).	<i>Miliolina agglutinans</i> (d'Orbigny).
" <i>sphæra</i> , d'Orbigny.	" <i>lauculentata</i> , Brady, var. <i>placentiformis</i> , Brady.
" <i>tubulosa</i> , Costa.	

Miliolina crassatina, Brady.
 „ *oblonga* (Montagu).
 „ *seminulum* (Linné).
 „ *tricarinata* (d'Orbigny).
 „ *triquetra*, Brady.
 „ sp. (?).
Ophthalmidium inconstans, Brady.
Planispirina celata (Costa).
Cornuspira foliacea (Philippi).
 „ *involveris*, Reuss.
 „ sp. (?).
Astrorhiza angulosa, Brady (?).
 „ *arenaria*, Norman.
Pelosina cylindrica, Brady.
 „ *rotundata*, Brady.
Technitella legumen, Norman.
Bathysiphon filiformis, Sars.
Psammosphæra fusca, Schulze.
Hyperammina elongata, Brady.
 „ *ramosa*, Brady.
 „ *subnodosa*, Brady.
 „ *vagans*, Brady.
Marsipella cylindrica, Brady.
Rhabdammina abyssorum, Sars.
 „ *linearis*, Brady.
Aschemonella catenata (Norman).
Reophae bacillaris, Brady.
 „ *dentaliniformis*, Brady.
 „ *diffugiformis*, Brady.
 „ *pilulifera*, Brady.
 „ *scorpiurus*, Montfort.
Haplophragmium agglutinans (d'Orbigny).
 „ *calcareum*, Brady.
 „ *globigeriniforme* (Parker and Jones).
 „ *latilorsatum* (Bornemann).
 „ *tenuimargo*, Brady.
Placopsilina bulla, Brady.
 „ *vesicularis*, Brady.
Haplostiche soldanii (Jones and Parker).
Ammodiscus gordialis (Jones and Parker).
 „ *incertus* (d'Orbigny).
 „ *tenuis*, Brady.
Trochanmina lituiformis, Brady.
 „ *proteus*, Karrer.
 „ *squamata*, Jones and Parker.
Webbina clavata, Jones and Parker.
Textularia agglutinans, d'Orbigny.
 „ „ var. *porrecta*, Brady.
 „ *aspera*, Brady.

(SUMMARY OF RESULTS CHALL. EXP.—1893.)

Textularia conica, d'Orbigny.
 „ *gramen*, d'Orbigny.
 „ *quadrilatera*, Schwager.
Verneuilina pygmæa (Egger).
Gaudryina baccata, Schwager.
 „ *pupoides*, d'Orbigny.
 „ *subrotundata*, Schwager.
Valvulina fusca (Williamson).
Clavulina communis, d'Orbigny.
Bulimina aculeata, d'Orbigny.
 „ *buchiana*, d'Orbigny.
 „ *contraria* (Reuss).
 „ *elegantissima*, d'Orbigny.
 „ *inflata*, Seguenza.
 „ *ovata*, d'Orbigny.
 „ *pupoides*, d'Orbigny.
 „ *pyrula*, d'Orbigny.
 „ *subteres*, Brady.
Virgulina subsquamosa, Egger.
Bolivina xanariensis (Costa).
 „ *beyrichi*, Reuss.
 „ *robusta*, Brady.
Cassidulina bradyi, Norman.
 „ *crassa*, d'Orbigny.
 „ *lævigata*, d'Orbigny.
 „ *subglobosa*, Brady.
Ehrenbergina hystrix, Brady.
 „ *serrata*, Reuss.
Chilostomella ovoidea, Reuss.
Lagena acuta (Reuss).
 „ *acuticosta*, Reuss.
 „ *elongata* (Ehrenberg).
 „ *globosa* (Montagu).
 „ *gracillima* (Seguenza).
 „ *hexagona* (Williamson).
 „ *lagenoides* (Williamson).
 „ *marginata* (Walker and Boys).
 „ *orbignyana* (Seguenza).
 „ *quadricostulata*, Reuss.
 „ *squamosa* (Montagu).
 „ *striatopunctata*, Parker and Jones.
 „ *sulcata* (Walker and Jacob).
Nodosaria communis, d'Orbigny.
 „ *consobrina*, d'Orbigny, var. *emaciata*, Reuss.
 „ *hispida*, d'Orbigny.
 „ *inflata*, Reuss (?).
 „ (*Glandulina*) *lævigata*, d'Orbigny.
 „ *obliqua* (Linné).
 „ *pyrula*, d'Orbigny.

STATIONS 164E
AND 164G.

STATIONS 164B
AND 164C

<i>Nodosaria raphanus</i> (Linné).	× <i>Globigerina helicina</i> , d'Orbigny.
„ (<i>Glandulina</i>) <i>rotundata</i> , Reuss.	× „ <i>inflata</i> , d'Orbigny.
„ <i>scalaris</i> (Batsch).	× „ <i>rubra</i> , d'Orbigny.
„ „ var. <i>separans</i> , Brady.	× „ <i>sacculifera</i> , Brady.
„ <i>soluta</i> , Reuss.	× <i>Orbulina universa</i> , d'Orbigny.
„ sp. (?).	× <i>Hastigerina pelagica</i> (d'Orbigny).
<i>Rhabdognium tricarinatum</i> (d'Orbigny).	× <i>Pullenia obliquiloculata</i> , Parker and Jones.
<i>Marginulina costata</i> (Batsch).	„ <i>quinqueloba</i> , Reuss.
<i>Vaginulina spinigera</i> , Brady.	„ <i>sphaeroides</i> (d'Orbigny).
<i>Cristellaria articulata</i> , Reuss.	× <i>Sphaeroidina bulloides</i> , d'Orbigny.
„ <i>compressa</i> , d'Orbigny.	× „ <i>dehiscens</i> , Parker and Jones.
„ <i>convergens</i> , Bornemann.	<i>Truncatulina haidingerii</i> (d'Orbigny).
„ <i>cultrata</i> (Montfort).	„ <i>lobatula</i> (Walker and Jacob).
„ <i>echinata</i> (d'Orbigny).	„ <i>reticulata</i> (Czjzek).
„ <i>gibba</i> , d'Orbigny.	„ <i>tenuimargo</i> , Brady.
„ <i>italica</i> (DeFrance).	„ <i>ungeriana</i> (d'Orbigny).
„ <i>orbicularis</i> (d'Orbigny).	„ <i>wuellerstorfi</i> (Schwager).
„ <i>papillosa</i> (Fichtel and Moll).	<i>Anomalina ammonoides</i> (Reuss).
„ <i>reniformis</i> , d'Orbigny (?).	„ <i>coronata</i> , Parker and Jones.
„ <i>rotulata</i> (Lamarck).	„ <i>grosserugosa</i> (Gümbel) (?).
„ <i>variabilis</i> , Reuss.	„ <i>polymorpha</i> , Costa.
„ sp. (?).	<i>Pulvinulina auricula</i> (Fichtel and Moll).
<i>Uvigerina aculeata</i> , d'Orbigny.	× „ <i>canariensis</i> (d'Orbigny).
„ <i>asperula</i> , Czjzek.	× „ <i>crassa</i> (d'Orbigny).
„ „ var. <i>ampullacea</i> , Brady.	„ <i>elegans</i> (d'Orbigny).
„ <i>pygmæa</i> , d'Orbigny.	„ <i>hauerii</i> (d'Orbigny).
<i>Sagrina columellaris</i> , Brady.	× „ <i>menardii</i> (d'Orbigny).
<i>Ramulina globulifera</i> , Brady (?).	× „ <i>melchioriana</i> (d'Orbigny).
× <i>Globigerina equilateralis</i> , Brady.	„ <i>partschiana</i> (d'Orbigny).
× „ <i>bulloides</i> , d'Orbigny.	<i>Rotalia orbicularis</i> , d'Orbigny.
× „ <i>conglobata</i> , Brady.	<i>Nonionina umbilicatula</i> (Montagu).
× „ <i>dubia</i> , Egger.	

Calotholus cruciatus was observed among the Radiolaria in the deposit from 1200 fathoms (Station 164A).

OBSERVED FROM
SURFACE NETS

Surface Organisms.—The following two species of Radiolaria are recorded from the surface :—

RADIOLARIA (Haeckel, Zool. pt. 40).

Dictyocephalus australis, Haeckel. | *Castanidium bromleyi*, Haeckel.

In addition, the following are recorded in the note-books :—Foraminifera (a few specimens of *Orbulina* and of *Globigerina*), *Sagitta*, and many small Crustacea.

Station 164D (Sounding 278), Sydney to New Zealand (see Charts 26 and 27, and Diagram 11). STATION 164D.

June 14, 1874; lat. $34^{\circ} 3' S.$, long. $152^{\circ} 20' E.$

Temperature of air at noon, $57^{\circ} 8$; mean for the day, $57^{\circ} 9$.

Temperature of water at surface, $67^{\circ} 5$.

Depth, 2100 fathoms.

At 8 A.M. got up steam. At 9.15 A.M. shortened and furled sails, and proceeded under steam to sound. Sounded in 2100 fathoms. At 11.20 A.M. sounding line carried away. Heavy sea and strong wind from the S.W. At 2 P.M. life-buoy washed away from starboard quarter in a heavy roll. Gale continued throughout the afternoon. Lightning at night and phosphorescent sea.

Distance at noon from Cape Farewell, 1062 miles. Made good 36 miles. Amount of current 24 miles, direction S.

Station 164E (Sounding 279), Sydney to New Zealand (see Chart 27 and Diagram 11). STATION 164E.

June 16, 1874; lat. $34^{\circ} 27' S.$, long. $154^{\circ} 57' E.$

Temperature of air at noon, $59^{\circ} 8$; mean for the day, $58^{\circ} 8$.

Temperature of water :—

Surface, ...	$64^{\circ} 0$	600 fathoms, ...	$38^{\circ} 9$
20 fathoms, ...	$63^{\circ} 2$	700 „	$37^{\circ} 8$
40 „	$63^{\circ} 0$	800 „	$37^{\circ} 2$
60 „	$59^{\circ} 5$	900 „	$36^{\circ} 9$
80 „	$56^{\circ} 0$	1000 „	$36^{\circ} 6$
100 „	$52^{\circ} 6$	1100 „	$36^{\circ} 3$
200 „	$48^{\circ} 2$	1200 „	$36^{\circ} 0$
300 „	$45^{\circ} 1$	1300 „	$35^{\circ} 7$
400 „	$42^{\circ} 8$	1400 „	$35^{\circ} 4$
500 „	$40^{\circ} 4$	1500 „	$35^{\circ} 1$

Density at $60^{\circ} F.$:—

Surface, ...	1.02644	200 fathoms, ...	1.02590
50 fathoms, ...	1.02636	300 „	1.02576
100 „	1.02627		

Depth, 2550 fathoms.

STATION 164E.

At 9.30 A.M. got up steam. At 11 A.M. shortened and furled sails. At 11.30 A.M. proceeded under steam to sound. At 1 P.M. sounded in 2550 fathoms, but the line carried away. At 2 P.M. obtained serial temperatures down to 1500 fathoms. At 4.30 P.M. made all plain sail. At 7.30 P.M. got up steam, and at 8 P.M. shortened and furled sails, and proceeded under steam. The following birds were observed about the ship:—*Diomedea exulans*, *Diomedea melanophrys*, another albatross very like the last but with a darker bill, Cape pigeons, a few prions, and a black bird resembling *Procellaria æquinoctialis* observed in the south.

Distance at noon from Cape Farewell, 936 miles. Made good 43 miles. Amount of current 27 miles, direction S. 20° E.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species is recorded from the surface at this Station:—

CEPHALOPODA (Hoyle, Zool. pt. 44).

Tuoniussuhmi (Lankester), n.sp.

In addition, the following are recorded in the note-books:—Many Foraminifera (*Globigerina* and *Pulvinulina*, *Pulvinulina micheliniana* especially abundant, along with *Globigerina bulloides*, var. *triloba*; the sarcode of *Pulvinulina*, after dissolving away the shell, showed no traces of symbiotic Algæ, but contained many oil-globules); *Acanthometræ* and other Radiolarians; *Diphyes*, *Abyla*, and other Siphonophoræ; *Sagitta*, Annelid in transparent tube (young *Sabella*); *Cypridina* and many other Crustacea; Gasteropod and Pteropod shells; *Salpa*.

STATION 165.

Station 165 (Sounding 280), Sydney to New Zealand (see Chart 27 and Diagram 11).

June 17, 1874; lat. 34° 50' S., long. 155° 28' E.

Temperature of air at noon, 59°·5; mean for the day, 59°·1.

Temperature of water at surface, 64°·5; bottom, 34°·5.

Density at 60° F. at surface, 1·02638; 50 fathoms, 1·02626; bottom, 1·02613.

Depth, 2600 fathoms; deposit, Red Clay, containing 6·54 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

Under steam all night. At 7.55 A.M. stopped and put dredge over, and veered 3500 fathoms. At 11 A.M. sounded in 2600 fathoms. At 2 P.M. commenced heaving in dredge, which came up at 4.30 P.M. nearly empty. It had been to the bottom, but the fine ooze was completely sifted out; a few specimens were found adhering to the net. The carbonic acid was determined in water from 50 fathoms, and amounted to

53.3 milligrammes per litre. At 4.45 P.M. made all plain sail. Three species of albatrosses, prions, giant petrels, and Cape pigeons were seen about the ship. At night the sea was phosphorescent. STATION 165.

Cape Farewell distant at noon, 900 miles. Made good 34 miles. Amount of current 23 miles, direction N. 65° W.

The following species are recorded in the Zoological Reports from the dredge at this Station :— ANIMALS FROM DREDGE.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha ornata, n.sp. Obtained also at Station 216, 2000 fathoms.

„ sp. (?).

Ophiomastus tegulitius, n.g., n.sp. Obtained also at Stations 164, 166, and 218, 275 to 2600 fathoms.

MACRURA (Spence Bate, Zool. pt. 52).

Pontophilus profundus, n.sp. One specimen ; obtained at no other locality.

In addition, the Station-book records :—Silicisponge, Pennatulid, worm-tubes, and Polyzoa.

Willemoes-Suhm writes : “The dredge brought up a small Crangonid of a tribe which has not often been taken in the deep-sea ; I remember only one instance of having found them—on the coast of Brazil. The candelabriform Polyzoon taken to-day seems to be closely allied to the form so frequently obtained in the tropical parts of the Atlantic. The worm-tubes were empty.”

Surface Organisms.—The following species are recorded from the surface at this Station :— ORGANISMS FROM SURFACE-NETS.

RADIOLARIA (Haeckel, Zool. pt. 40).

Rhaphidozoum australe, Haeckel.

Siphonosphæra fragilis, Haeckel.

Actinelius protogenes, Haeckel.

Castanarium huxleyi, Haeckel.

Castanidium bromleyi, Haeckel.

COPEPODA (Brady, Zool. pt. 23).

Undina darwinii, Lubbock.

Candace pachydactyla, Dana.

Corycaeus varius, Dana.

Oncæa obtusa, Dana.

AMPHIPODA (Stebbing, Zool. pt. 67).

Anchylomera sp. (?).

Primno latreillei, n.sp.

SIPHONOPHORÆ (Haeckel, Zool. pt. 77).

Desmalia imbricata, n.g., n.sp. (?).

STATION 165.

SCHIZOPODA (Sars, Zool. pt. 37).

Siriella thompsoni (M.-Edwards).

CEPHALOPODA (Hoyle, Zool. pt. 44).

Taonius suhmi (Lankester), n.sp.

TUNICATA (Herdman, Zool. pt. 76).

Doliolum ehrenbergi, Krohn.*Salpa democratica-mucronata*,
Forskåhl.

In addition, the following are recorded in the note-books:—*Globigerina*, *Pulvinulina micheliniana*, *Physalia*, *Velella*, *Diphyes*, *Sagitta*, *Saphirina* and other Copepods, *Hyperia*, larvæ of *Squilla*, *Euphausia*; and *Calcarella spinosa* for the first time.

Willemoes-Suhm writes: “*Calcarella spinosa* having been taken on the surface, it could be ascertained that it is indeed a Heteropod allied to the Atlantidæ. Some doubts seem to exist about it, for Adams places it among the Heteropods, though very little known, while Keferstein mentions neither *Calcarella* nor *Macgillivraya* in Bronn's Klassen und Ordnungen des Thierreichs. These Molluscs seem to be peculiar to the South Sea; Murray says he has met with them several times.”

STATION 165A.

Station 165A (Sounding 281), Sydney to New Zealand (see Chart 27 and Diagram 11).

June 19, 1874; lat. 36° 41' S., long. 158° 29' E.

Temperature of air at noon, 58°·3; mean for the day, 57°·3.

Temperature of water:—

Surface, ...	62·5	400 fathoms, ...	43·8
10 fathoms, ...	62·8	500 „	41·6
20 „	62·5	600 „	39·8
30 „	62·5	700 „	38·6
40 „	62·0	800 „	37·5
50 „	60·5	900 „	36·9
60 „	59·2	1000 „	36·5
70 „	58·0	1100 „	36·2
80 „	57·0	1200 „	36·0
90 „	56·4	1300 „	35·7
100 „	55·8	1400 „	35·4
200 „	50·8	1500 „	35·1
300 „	47·0	Bottom, ...	34·4

Density at 60° F.:—

Surface, ...	1·02637	150 fathoms, ...	1·02606
5 fathoms, ...	1·02636	300 „	1·02571
100 „	1·02606	400 „	1·02627

Depth, 2600 fathoms; deposit, Red Clay, containing 19·13 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.). STATION 165A.

Weather very fine. At 1.30 P.M. stopped and sounded in 2600 fathoms. Took serial temperatures down to 1500 fathoms, and specimens of water down to 400 fathoms. The carbonic acid was determined in water from 5 fathoms, and amounted to 51·1 milligrammes per litre. Cutter away with naturalists for surface collecting. At 5 P.M. completed observations, and proceeded under steam.

Cape Farewell distant at noon, 735 miles. Made good 148 miles. Amount of current 14 miles, direction S. 60° E.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed in the deposit from this Station; the pelagic species, which make up about 52 per cent. of the carbonate of lime present in the deposit, are marked thus × :—

ORGANISMS FROM
THE DEPOSIT.

<i>Biloculina depressa</i> , d'Orbigny.	<i>Lagena lævis</i> (Montagu).
„ <i>irregularis</i> , d'Orbigny.	„ <i>marginata</i> (Walker and Boys).
<i>Haplophragmium agglutinans</i> (d'Orbigny).	„ „ var. <i>semimarginata</i> , Reuss.
„ <i>latidorsatum</i> (Bornemann).	„ <i>squamosa</i> (Montagu).
<i>Ammodiscus incertus</i> (d'Orbigny).	„ sp. (?)
<i>Trochammina galeata</i> , Brady.	<i>Polymorphina angusta</i> , Egger.
„ <i>trullissata</i> , Brady.	<i>Uvigerina tenuistriata</i> , Reuss.
<i>Textularia agglutinans</i> , d'Orbigny.	„ sp. (?)
<i>Gaudryina pupoides</i> , d'Orbigny.	× <i>Globigerina bulloides</i> , d'Orbigny.
„ <i>siphonella</i> , Reuss.	× <i>Orbulina universa</i> , d'Orbigny.
<i>Clavulina communis</i> , d'Orbigny.	<i>Pullenia quinqueloba</i> , Reuss.
<i>Bulimina elegans</i> , d'Orbigny (?)	„ <i>sphæroides</i> (d'Orbigny).
<i>Virgulina schreibersiana</i> , Czjzek.	<i>Truncatulina lobatula</i> (Walker and Jacob).
<i>Bolivina textularioides</i> , Reuss.	× <i>Pulvinulina crassa</i> (d'Orbigny) (?)
<i>Cassidulina subglobosa</i> , Brady.	„ <i>exigua</i> , Brady.
<i>Lagena acuticosta</i> , Reuss.	<i>Rotalia soldanii</i> , d'Orbigny.
„ <i>auriculata</i> , Brady.	<i>Nonionina umbilicatula</i> (Montagu).
„ <i>hispidula</i> , Reuss.	

Surface Organisms.—The sea was very smooth, and Murray from a boat collected many specimens of Foraminifera, *Collozoum inerme* and other Radiolaria, Infusoria, Medusæ, Siphonophoræ, Ctenophoræ, very long specimens of *Alciopa* with intensely black spots, *Sagitta*, Copepods, *Hyperia*, *Euphausia*, and *Salpa*. There were great numbers of minute, quite transparent, jelly-masses, which on examination were found to enclose a number of Coccospheres and occasionally Rhabdospheres, with other small foreign bodies—supposed by Murray to be the *Myxobrachia* of Haeckel; numberless Coccospheres and a few Rhabdospheres were also found in the stomachs of the *Salpæ*. A very long, ribbon-like, animal of a golden green colour—supposed to be a *Cestum*—was observed.

ORGANISMS FROM
THE SURFACE.

STATION 165B

Station 165B (Sounding 282), Sydney to New Zealand (see Chart 27 and Diagram 11).

June 21, 1874; lat. $37^{\circ} 53' S.$, long. $163^{\circ} 18' E.$

Temperature of air at noon, $59^{\circ} 0$; mean for the day, $58^{\circ} 5$.

Temperature of water:—

Surface, ...	59.5	500 fathoms, ...	42.5
20 fathoms, ...	59.8	600 "	40.4
40 "	59.0	700 "	38.7
60 "	58.0	800 "	37.5
80 "	57.2	900 "	36.8
100 "	55.9	1000 "	36.4
200 "	51.2	1250 "	35.7
300 "	47.8	1500 "	34.8
400 "	44.9	Bottom, ...	34.7

Density at $60^{\circ} F.$ at surface, 1.02616; bottom, 1.02625.

Depth, 1975 fathoms; deposit, Globigerina Ooze, containing 76.59 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6 A.M. got up steam, and at 6.30 A.M. shortened and furled sails, and proceeded under steam to sound. Sounded in 1975 fathoms. At 8 A.M. obtained serial temperatures down to 1500 fathoms, and specimens of water. At 9.45 A.M. completed observations, and made sail. A strong northerly breeze since morning; towards midnight the wind rose to a gale. Besides *Diomedea exulans* and *Diomedea melanophrys*, another albatross was observed to-day; it had a black bill, head, and neck, rump and belly white, otherwise like *Diomedea melanophrys*. There were great numbers of *Procellaria æquinoctialis*, as well as a few prions and Cape pigeons.

Cape Farewell distant at noon, 464 miles. Made good 150 miles. Amount of current 18 miles, direction S. $23^{\circ} W.$

ORGANISMS FROM
THE DEPOSIT.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed in the deposit from this Station; the pelagic species, which make up about 85 per cent. of the carbonate of lime present in the deposit, are marked thus ×:—

Biloculina depressa, d'Orbigny.
Milulina oblonga (Montagu).
 " *semiculata* (Linné).
 " *testata* (Karrer).
Haplophragmium latidorsatum (Bornemann).

Trochammina pauciloculata, Brady.
 " *trullissata*, Brady.
Gaudryina pupoides, d'Orbigny.
Clavulina communis, d'Orbigny.
Virgulina subdepressa, Brady (?).

<i>Virgulina subsquamosa</i> , Egger.	× <i>Globigerina inflata</i> , d'Orbigny.	STATION 165B.
<i>Bolivina textilarioides</i> , Reuss.	× <i>Orbulina universa</i> , d'Orbigny.	
<i>Cassidulina subglobosa</i> , Brady.	× <i>Pullenia obliquiloculata</i> , Parker and Jones.	
<i>Ehrenbergina serrata</i> , Reuss.	„ <i>quingueloba</i> , Reuss.	
<i>Lagena auriculata</i> , Brady.	„ <i>sphaeroides</i> (d'Orbigny).	
„ <i>striata</i> (d'Orbigny).	× <i>Sphaeroidina dehiscens</i> , Parker and Jones.	
„ <i>truncata</i> , Brady.	<i>Truncatulina akneriana</i> (d'Orbigny).	
„ sp. (?).	„ <i>pygmæa</i> , Hantken.	
<i>Nodosaria communis</i> , d'Orbigny.	„ <i>tenera</i> , Brady.	
<i>Polymorphina angusta</i> , Egger.	„ <i>wuellerstorfi</i> (Schwager).	
<i>Urigerina aculeata</i> , d'Orbigny (?).	× <i>Pulvinulina canariensis</i> (d'Orbigny).	
„ <i>asperula</i> , Czjzek.	× „ <i>crassa</i> (d'Orbigny).	
„ „ var. <i>auberiana</i> , d'Orbigny.	„ <i>exigua</i> , Brady.	
× <i>Globigerina æquilateralis</i> , Brady.	× „ <i>melchioriana</i> (d'Orbigny).	
× „ <i>bulloides</i> , d'Orbigny.	<i>Rotalia soldanii</i> , d'Orbigny.	
× „ „ var. <i>triloba</i> , Reuss (?).	<i>Nonionina pompilioides</i> (Fichtel and Moll).	
× „ <i>dubia</i> , Egger.	„ <i>umbilicatulula</i> (Montagu).	

It is worthy of notice that *Coccospheres*, *Coccoliths*, and *Rhabdoliths* were very abundant in this deposit from 1975 fathoms, while they were nearly, if not quite, absent in the deposit from 2600 fathoms at the previous Station, although they were most abundant on the surface at both positions (see page 587).

Station 165c (Sounding 283), Sydney to New Zealand (see Chart 27 and STATION 165c. Diagram 11).

June 22, 1874; lat. 38° 36' S., long. 166° 39' E.

Temperature of air at noon, 59°·5; mean for the day, 58°·3.

Temperature of water:—

Surface, ...	58·2	400 fathoms, ...	45·3
20 fathoms, ...	58·1	500 „	42·0
40 „	57·8	600 „	39·8
60 „	57·4	700 „	38·2
80 „	56·6	800 „	37·4
100 „	55·9	900 „	36·9
200 „	52·2	1000 „	36·5
300 „	48·5	Bottom, „	36·4

Density at 60° F. at surface, 1·02614; bottom, 1·02594.

Depth, 1100 fathoms; deposit, *Globigerina* Ooze, containing 84·89 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 1.15 P.M. shortened and furled sails, and got up steam to sound. At 2 P.M. sounded in 1100 fathoms. Obtained serial temperatures down to the bottom, and

STATION 165c.

samples of water. At 3.30 P.M. completed observations and made all plain sail with a good breeze from the north.

Cape Farewell distant at noon, 334 miles. Made good 133 miles. Amount of current 28 miles, direction S. 39° W.

STATION 166.

Station 166 (Sounding 284), Sydney to New Zealand (see Chart 27 and Diagram 11).

June 23, 1874; lat. 38° 50' S., long. 169° 20' E.

Temperature of air at noon, 58°·8; mean for the day, 58°·6.

Temperature of water:—

Surface, ...	58·5	150 fathoms, ...	54·7
50 fathoms, ...	58·5	200 „	52·7
100 „	56·5	250 „	50·8

Density at 60° F. at surface, 1·02625; bottom, 1·02668.

Depth, 275 fathoms; deposit, Globigerina Ooze, containing 88·45 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6 A.M. got up steam, and at 6.30 A.M. shortened and furled sails, and proceeded under steam to sound and trawl. Sounded in 275 fathoms; put trawl over: At 10 A.M. hove up trawl containing many specimens, and put it over again. The carbonic acid was determined in bottom water, and amounted to 53·8 milligrammes per litre. At 1 P.M. hove up trawl containing many specimens. The shrimps (*Pandalus magnoculus*) came up in great numbers in both hauls, and subsequently made their appearance on the dinner-table. At 1.30 P.M. made all plain sail. At 5.30 P.M. shortened sail, brought ship to wind, and sounded in 350 fathoms (Station 166A). At 10 P.M. brought ship to wind, and sounded in 400 fathoms, deposit Globigerina Ooze, containing 82·20 per cent. of carbonate of lime (Station 166B). At 10.35 P.M. proceeded under steam.

Distance at noon from Cape Farewell, 199 miles. Made good 141 miles. Amount of current 8 miles, direction S. 56° E.

SPECIES FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at Station 166:—

SIPHONOPHORE (Haeckel, Zool. pt. 77).

Stephania bathyphysa, n.g., n.sp. Two specimens; obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

STATION 166.

Cribrella compacta, n.sp. One specimen; obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha sp. (?) (young).

Ophiomastus tegulitius, n.g., n.sp. Obtained also at Stations 164, 165, and 218.

Amphiura sp. (?) (young).

ECHINOIDEA (Agassiz, Zool. pt. 9).

Temnopleurus reynaudi, Agassiz. Obtained also at Stations 192 and 219, 129 and 150 fathoms.

ANNELIDA (M'Intosh, Zool. pt. 34).

Eunoa iphionoides, n.sp. One specimen; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Nephrops thomsoni, n.sp. Two specimens; obtained also at Station 204A, 100 fathoms.

Pandalus magnoculus, n.sp. Numerous specimens; obtained also at Station 167, 150 fathoms.

ANOMURA (Henderson, Zool. pt. 69).

Eupagurus lacertus, n.sp. Two specimens; obtained also at Stations 161, 162, and Port Jackson (var. *nana*).

Munida gracilis, n.sp. Two specimens; obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Fusus (*Neptunea*) *mandarinus*, Duclos. Obtained also at Station 167A, 10 fathoms.
Recorded from New Zealand.

„ („) *valedictus*, n.sp. Obtained at no other locality.

Voluta (*Cymbiola*) *lutea*, n.sp. Obtained at no other locality.

FISHES (Günther, Zool. pts. 6 and 57).

Trachichthys intermedius, Hector. Obtained at no other locality by the Challenger.

Cyttus abbreviatus, Hector. Obtained at no other locality by the Challenger.

Scorpaena percoides, Solander. One specimen; obtained also at Stations 163A and 173.

STATION 166.

Macrurus australis (Richards). Several specimens ; obtained at no other locality by the Challenger. Recorded from Port Arthur and New Zealand.
 „ *denticulatus*, Richards. One specimen ; obtained also at Station 170, 520 fathoms. Recorded from New Zealand.

Excluding Protozoa, over 100 specimens of invertebrates and fishes were obtained at this Station, belonging to 19 species, of which 10 are new to science, including representatives of 2 new genera ; 6 of the new species were not obtained elsewhere.

Willemoes-Suhm writes : “ Two specimens, 140 and 110 mm. in length, of an Astacid were brought up. They evidently belonged to the genus *Nephrops*, having all the characters of the Astacids, especially the scale on the outer antennæ and the ridge across the percion, but in addition a long rostrum and very much prolonged anterior chelæ. In this species, which was of a pure milk-white colour, the joints of the large chelæ had a reddish-brown colour, like the borders of the abdominal rings ; in spirit the white colour gradually changed into a dirty reddish colour. The two hauls of the trawl brought up the same things : lobsters, shrimps, shells, and fishes.

Calothamnus sedecimalis was observed among the Radiolaria in the deposit from this Station.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species are recorded from the surface in this locality :—

RADIOLARIA (Haeckel, Zool. pt. 40).

Staurotholus tetrastylus, Haeckel.
Lonchostaurus bifidus, Haeckel.
Custanidium bromleyi, Haeckel.

AMPHIPODA (Stebbing, Zool. pt. 67).

Parapronoë clausoides, n.sp.

SCHIZOPODA (Sars, Zool. pt. 37).

Euphausia pellucida, Dana.

TUNICATA (Herdman, Zool. pt. 76).

Salpa costata - *tilesii*, Quoy and Gaimard—Cuvier.
 „ *cordiformis* - *zonaria*, Quoy and Gaimard—Pallas.

In addition the following species are recorded from the surface between Sydney and Wellington, the exact locality not noted :—

AMPHIPODA (Stebbing, Zool. pt. 67).

Anchylomera sp.(?)

MACRURA (Spence Bate, Zool. pt. 52).

Sergestes parvidens, n.sp.

FISHES (Günther, Zool. pt. 78)

Platystethus huttonii, Günther.
Hemerocaetes acanthorhynchus (Forst).
Centriscus scolopax, Linné.
Halaphya elongata, n.g., n.sp.

Station 166c (Sounding 287), Sydney to New Zealand (see Chart 27 and Diagram 11). STATION 166c.

June 24, 1874; lat. 39° 21' S., long. 171° 28' E.

Temperature of air at noon, 57°·8; mean for the day, 56°·2.

Temperature of water at surface, 58°·0.

Density at 60° F. at surface, 1·02617.

Depth, 400 fathoms; deposit, Globigerina Ooze, containing 82·20 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 4.10 A.M. brought ship to wind and sounded in 400 fathoms. At 5 A.M. proceeded.

Station 167.

STATION 167.

At 7.30 A.M. shortened and furled sails, got up steam, and sounded in 150 fathoms, deposit Blue Mud, containing 26·71 per cent. of carbonate of lime. The trawl was sent down twice, and the dredge once, and brought up many specimens. At 11.30 A.M. completed observations, and made all plain sail. At 3 P.M. brought ship to wind, and sounded in 145 fathoms. At 5 P.M. got up steam, and at 5.30 P.M. shortened and furled sails and proceeded under steam. At 11.40 P.M. sounded in 75 fathoms.

Distance at noon from Stephen's Island, 122 miles. Made good 122 miles. Amount of current 9 miles, direction S. 65° E.

The following species are recorded in the Zoological Reports from the trawl and dredge at this Station:—

ANIMALS FROM
TRAWL AND
DREDGE

ASTEROIDEA (Sladen, Zool. pt. 51).

Psilaster acuminatus, n.g., n.sp. Obtained also at Station 164 and Simon's Bay, Cape.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiomyxa australis, Lütken. For distribution see Station 109.

ANNELIDA (M'Intosh, Zool. pt. 34).

Hyalinæcia tubicola, Müller, var. *longibranchiata*, nov. Obtained also at Station VIII.

Apomatus elisabethæ, n.sp. One specimen; obtained at no other locality.

Pomatocerus strigiceps, Mörch (?). One specimen; obtained at no other locality by the Challenger.

STATION 167. OSTRACODA (Brady, Zool. pt. 3).

Bairdia ovata, Bosquet (?). Obtained also at Simon's Bay, Cape.

Cythere rastromarginata, n.sp. Obtained also at Station 162 and Sandwich Islands.

„ *arata*, n.sp. A few valves ; obtained at no other locality.

„ *dasyderma*, n.sp. Widely distributed (see Station 5).

„ *scutigera*, Brady. Obtained also at Station 300, Amboina, and New Guinea, 15 to 1375 fathoms. Recorded from Java.

Krithe producta, n.sp. Widely distributed (see Station 70).

Cytherella pulchra, Brady. Obtained also at Stations 33, 344, and Port Jackson.

„ *punctata*, Brady. Obtained also at Stations 135, 191A, 305, and Port Jackson.

CIRRIPEDIA (Hock, Zool. pt. 25).

Scalpellum pedunculatum, n.sp. One specimen ; obtained at no other locality.

AMPHIPODA (Stebbing, Zool. pt. 67).

Ampelisca chiltoni, n.sp. Four specimens ; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Ibaccus altierenatus, n.sp. Four specimens ; obtained at no other locality.

Pandalus magnoculus, n.sp. Fourteen specimens ; obtained also at Station 166.

ANOMURA (Henderson, Zool. pt. 69).

Paguristes subpilosus, n.sp. Two specimens in shells of *Ancilla* ; obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Ebalia laevis (Bell). Two specimens ; obtained also at Station 167A, 10 fathoms.

„ *tuberculosa* (M.-Edwards). Numerous specimens ; obtained also at Stations 142, 162, 163A, and Port Jackson.

GASTEROPODA (Watson, Zool. pt. 42).

Ancilla (*Anaulax*) *pyramidalis* (Reeve). Obtained at no other locality by the Challenger. Recorded from New Zealand.

POLYZOA (Busk, Zool. pts. 30 and 50).

Caberea rostrata, n.sp. Obtained at no other locality.

Schizoporella marsupifera, n.sp. Obtained also at Station 144A.

Cellepora pustulata, n.sp. Obtained also at Station 144A.

Supercyrtis digitata, d'Orbigny. Obtained at no other locality by the Challenger. Recorded from Australia. Fossil—Cretaceous, Mendon, &c., and Australia.

FISHES (Günther, Zool. pts. 6 and 57).

STATION 167.

Pseudorhombus hectori, n.sp. One specimen; obtained at no other locality.
 „ *boops*, Hector. One specimen (recorded in error from 400 fathoms);
 obtained at no other locality by the Challenger.

In addition to the foregoing, the following are recorded in the Station-book:—
 Pennatulids, small Coral, *Sphæroma*, *Myochama*, *Murex zealandicus*, and several
 specimens of a Brama-like fish (*Trachichthys*).

Excluding Protozoa, nearly 100 specimens of invertebrates and fishes were obtained
 at this Station, belonging to about 33 species, of which 16 are new to science, including
 representative of 1 new genus; 8 of the new species were not obtained elsewhere.

Willemoes-Suhm writes: "In one of the Caridids brought up by the trawl I found
 a Nematod curled up in the body-cavity. It was a very interesting larva of
 a worm, evidently belonging to the Gordiacea. This is the second time I have found
 such a case of parasitism, and we have, besides, once found in deep water free-living,
 perfectly opaque, worms, which looked very much like a species of *Gordius*, and which
 were probably the adults of the shrimp parasites. No case of marine *Gordii*, nor of their
 parasitism in shrimps, was hitherto known, so that these facts are of some biological
 importance. Besides *Pagurus* and a fine *Scalpellum*, there were specimens of an
Ibaccus, a genus of which very large species are found on the coast of Australia."

After taking many shallow soundings in Cook Strait, the Challenger anchored in Port
 Hardy at 5 P.M. on June 25, 1874, remaining there till 4 A.M. on June 27, proceeding
 thence to Queen Charlotte Sound, where she anchored at 1.30 P.M. Three dredgings
 were taken from the cutter (Station 167A, 10 fathoms). At 8 A.M. on June 28 the ship
 left Queen Charlotte Sound, sailing through Cook Strait, against a strong wind and heavy
 sea, to Port Nicholson, anchoring there at 5 P.M. The expedition left Port Nicholson at
 4 P.M. on July 6, but the weather becoming thick, it was found necessary to anchor for
 the night in Worser Bay, the ship finally leaving New Zealand at 6.40 A.M. on July 7.

AT NEW
 ZEALAND.

The following species are recorded in the Zoological Reports from the shore and
 shallow waters of New Zealand, the locality and depth being indicated:—

ANIMALS FROM
 NEW ZEALAND.

PENNATULIDA (Kölliker, Zool. pt. 2).

Virgularia gracillima, n.sp. Fragment (Station 167A, 10 fathoms); obtained at no
 other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Asterina regularis, Verrill. (Station 167A, 10 fathoms); obtained at no other
 locality by the Challenger. Recorded from Australia.

NEW ZEALAND. OPHIUROIDEA (Lyman, Zool. pt. 14).

Pectinura maculata, Verrill. (Station 167A, 10 fathoms); obtained at no other locality by the Challenger.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Caulina coriacea, Hutton. Fragments (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.

Thyonidium rugosum, n.sp. One specimen and fragments (Station 167A, 10 fathoms); obtained at no other locality.

Stichopus sordidus, n.sp. Eight specimens (Station 167A, 10 fathoms); obtained at no other locality.

ENTOZOA (Linstow, Zool. pt. 71).

Tania increscens, n.sp. One specimen from *Hamatopus unicolor* (Hardy Bay).

NEMERTEA (Hubrecht, Zool. pt. 54).

Cerebratulus parkeri, n.sp. Two specimens (Station 167A, 10 fathoms); obtained at no other locality.

„ *angusticeps*, n.sp. One specimen (Station 167A, 10 fathoms); obtained also at Station 168, 1100 fathoms.

ANNELIDA (M'Intosh, Zool. pt. 34).

Leanira laevis, n.sp. Fragmentary specimen (Station 167A, 10 fathoms); obtained at no other locality.

Nephtys verrilli, n.sp. Several specimens (Station 167A, 10 fathoms); obtained at no other locality.

Eone trifida, n.sp. Fragmentary specimen (Station 167A, 10 fathoms); obtained at no other locality.

Glycera lamelliformis, n.sp. Two fragmentary specimens (Station 167A, 10 fathoms); obtained at no other locality.

Brada whiteavesii, n.sp. Fragmentary specimen (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from Gulf of St. Lawrence.

OSTRACODA (Brady, Zool. pt. 3).—From Wellington Harbour.

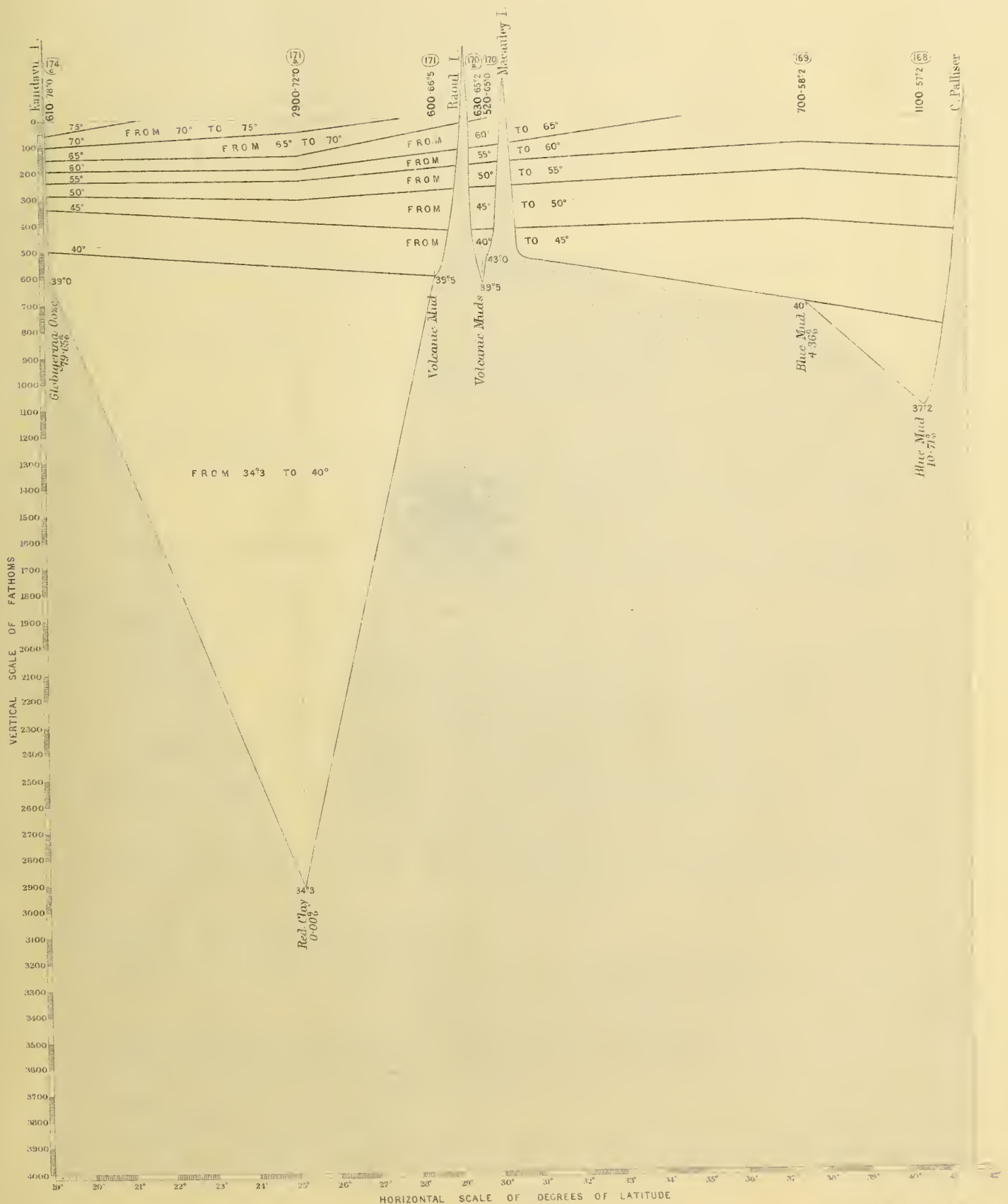
Paracypris polita, Sars (?). Obtained also at Station 279, 420 fathoms, and in Vigo Bay, Spain.

Phlyctenophora zealandica, n.g., n.sp. Obtained also at Port Jackson and New Guinea. Only species of the genus.

PACIFIC OCEAN

Meridional Temperature Section. Kandavu I. to C. Palliser, New Zealand.

For explanation of Symbols see Appendix I.





- Aglaia clavata*, n.sp. Obtained at no other locality.
Macrocypris tumida, n.sp. Obtained also at Station 149.
Cythere murrayana, n.sp. Obtained at no other locality.
 „ *scabrocuneata*, n.sp. Obtained also at Stations 162 and 233E.
Cytheropteron wellingtoniense, n.sp. Obtained at no other locality.
Sclerochilus contortus (Norman). Obtained also at Stations 149 and 151.
Cytherella polita, Brady. Obtained also at Station 321, 13 fathoms. Recorded from West Indies.

ISOPODA.

One specimen, genus and species undetermined (Station 167A, 10 fathoms).

MACRURA (Spence Bate, Zool. pt. 52).

Brachycarpus audouini, n.g., n.sp. One specimen (Station 167A, 10 fathoms); obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Paguristes pilosus (M.-Edwards). One specimen (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.

Parapagurus latimanus, n.sp. One specimen (Station 167A, 10 fathoms); obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Ommatocarcinus macgillivrayi, White. Three specimens (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Hemiplax hirtipes, Heller. Five specimens (Station 167A, 10 fathoms); obtained at no other locality by the Challenger.

Ebalia laevis (Bell). Two specimens (Station 167A, 10 fathoms); obtained also at Station 167.

Halicarcinus planatus (Fabricius). One specimen (Cape Campbell, presented by Wellington Museum).

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Psammobia lineolata, Gray. (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand and Chatham Islands.

Tellina (*Tellinella*) *charlottæ*, n.sp. (Station 167A, 10 fathoms); obtained at no other locality.

NEW ZEALAND.

- Tellina* (*Tellinella*) *huttoni*, n.sp. One specimen (Station 167A, 10 fathoms); obtained at no other locality.
- Tapes* (*Amygdala*) *intermedia* (Quoy and Gaimard). (D'Urville Island, beach); obtained at no other locality by the Challenger. Recorded from Auckland Islands.
- Venus* (*Chamelæa*) *mesodesma*, Quoy and Gaimard. (D'Urville Island, beach); obtained also at Station 135.
- Cytherea* (*Callista*) *multistriata*, Sowerby. (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Dosinia* *lambata* (Gould). (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Nucula* *nitidula*, Adams. (Station 167A, 10 fathoms); obtained at no other locality by the Challenger.
- Mytilus edulis*, Linné. (D'Urville Island); obtained also at Stations 315 and 322, 12 and 21 fathoms. Recorded from New Zealand and Kerguelen.

GASTEROPODA (Watson, Zool. pt. 42).

- Trochus* (*Diloma*) *porcifer* (Adams). One specimen (D'Urville Island, beach); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Turbo smaragdus* (Martyn). (D'Urville Island, beach); obtained also at Fiji. Recorded from New Zealand.
- Murex* (*Phyllonotus*) *zelandicus*, Quoy and Gaimard. (Station 167A, 10 fathoms); obtained also at Stations 171 and 172, 600 and 18 fathoms. Recorded from New Zealand.
- Purpura* (*Polytropæa*) *scobina*, Quoy and Gaimard, var. *albomarginata*, Deshayes. (D'Urville Island, beach); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Fusus* (*Neptunea*) *mandarinus*, Duclos. (Station 167A, 10 fathoms); obtained also at Station 166.
- „ („) *nodosus* (Martyn). (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Ancilla* (*Anaulax*) *mucronata* (Sowerby). (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand, Tasmania, and Australia.

- Ancilla (Anaulax) nana*, n.sp. (Station 167A, 10 fathoms); obtained at no other locality. NEW ZEALAND.
- Voluta (Alcithoe) gracilis*, Swainson. One specimen (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from the Pacific and New Zealand.
- Turritella rosea*, Quoy and Gaimard. (Station 167A, 10 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.
- „ *carlottæ*, n.sp. (Station 167A, 10 fathoms); obtained also at Station 162.
- Litorina cincta*, Quoy and Gaimard. (D'Urville Island, beach); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Siphonaria cancer*, Reeve. (D'Urville Island, beach); obtained at no other locality by the Challenger. Recorded from New Zealand.

POLYPLACOPHORA (Haddon, Zool. pt. 43).

- Chiton pellis-serpentis*, Quoy and Gaimard. One specimen (D'Urville Island, beach); obtained at no other locality by the Challenger. Recorded from New Zealand.

TUNICATA (Herdman, Zool. pt. 17).

- Boltenia pachydermatina*, n.sp. Two specimens (Canterbury, presented at Wellington).

FISHES (Günther, Zool. pt. 6).

- Sebastes percoides*, Richards. (Port Hardy).
- Scorpana cruenta*, Solander. (New Zealand).
- Chilodactylus macropterus*, Forster. (Port Hardy).
- Percis colias*, Forster. (Wellington Harbour and Port Hardy).
- Hemerocates acanthorhynchus*, Forster. (Wellington Harbour).
- Notacanthus sexspinis*, Richards. (Cook Strait).
- Labrichthys celidota*, Forster. (Wellington Harbour).
- „ *bothryocosmus*, Richards. (Port Hardy).
- Halargyreus johnsoni*, Günther. (New Zealand).
- Pseudophycis bacchus*, Forster. (Port Hardy).
- Coryphænoides denticulatus*, Richards. (Cook Strait).
- Photichthys argenteus*, Hutton. (Cook Strait).
- Monacanthus convexirostris*, Günther. (Queen Charlotte Sound).
- Bdellostoma cirrhatum*, Forster. (Queen Charlotte Sound).

NEW ZEALAND.

In addition, the Station-book records from Station 167A, 10 fathoms:—*Balanus*, Gammarid, Isopod parasitic on Ophiurids, Sphæromidæ, *Alcyonium*, *Cancer*, *Gelasimus*, Polyzoa (*Caberea*), compound Ascidian, and egg-capsules.

In the foregoing list about 79 species are recorded, of which 24 are new to science, including representatives of 2 new genera; 19 of the new species were not obtained elsewhere.

With reference to the dredgings in Queen Charlotte Sound (Station 167A, 10 fathoms), Willemoes-Suhm writes: "The facies of the fauna was more tropical than that of the Port Jackson fauna, which is easily explained, seeing that the Polynesian fauna probably extends to the shores of New Zealand; we are now in the periphery of another geographical centre. *Voluta vespertilio*, *Murex*, and *Typhis*, as well as the fine *Olivæ*, may be quoted in favour of this. The egg-capsules brought up belong probably to a large *Buccinum*, in which genus it is known that the young ones leave the egg-capsules after having lost their velum. This must be the case here, as one finds in each capsule three to six young shells having the prodigious length of 4 mm. The Crustacea were remarkable only for the presence of *Gelasimus*, the members of which generally live on the beach, or even in holes on the land, and come only to the sea to deposit their eggs."

STATION 168.

Station 168 (Sounding 290), New Zealand to Tongatabu (see Chart 27 and Diagram 12).

July 8, 1874; lat. 40° 28' S., long. 177° 43' E.

Temperature of air at noon, 56°·8; mean for the day, 56°·7.

Temperature of water:—

Surface, ...	57·2	200 fathoms, ...	51·7
25 fathoms, ...	56·5	300 „	48·2
50 „	56·5	400 „	45·4
75 „	56·5	500 „	43·7
100 „	55·7	600 „	42·1
125 „	54·8	Bottom, ...	37·2
150 „	53·9		

Density at 60° F. at surface, 1·02622; bottom, 1·02584.

Depth, 1100 fathoms; deposit, Blue Mud, containing 10·71 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 8.40 A.M. observed land to the N.W. At 9.30 A.M. got up steam. At 10 A.M. shortened and furled sails, and sounded in 1100 fathoms. At 11 A.M. put over trawl.

At 1 P.M. dingey went away with naturalists. Obtained a series of temperatures down to 600 fathoms. At 3.45 P.M. trawl came up with the bag full of mud and many animals. There being no wind, proceeded under steam for the rest of the day. About 7.30 P.M. the ship passed through several large shoals of *Pyrosoma*, and the horizon seemed lighted up by these floating patches. One specimen taken in the tow-net measured 9.6 inches in length, and 2 inches at the broader end, gradually tapering off towards the other extremity. STATION 168.

Distance at noon from East Cape, New Zealand, 162 miles. Made good 126 miles. Amount of current 19 miles, direction S. 39° E.

The following species are recorded in the Zoological Reports from the trawl at this Station :— ANIMALS FROM TRAWL.

ACTINIARIA (Hertwig, Zool. pt. 73).

Edwardsia sp. (?). One specimen.

DEEP-SEA MEDUSÆ (Haeckel, Zool. pt. 12).

Periphylla mirabilis, n.sp. One specimen ; obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiozona stellata, n.sp. Obtained also at Station 169, 700 fathoms.

Ophiocten hastatum, n.sp. Obtained also at Stations 78 and 146.

Ophiothamnus sp. (?) (young).

ECHINOIDEA (Agassiz, Zool. pt. 9).

Pourtalesia laguncula, n.sp. Obtained also at Stations 169, 191, 232, and 244, 345 to 2900 fathoms.

Brissopsis luzonica (Gray). Obtained also at Stations 188, 191, 203, 232, and Tahiti Harbour, 12 to 800 fathoms.

HOLOTHURIOIDEA (Théel, Zool. pt. 13).

Enypniastes eximia, n.g., n.sp. Four damaged specimens ; obtained at no other locality. Only species of the genus.

NEMERTEA (Hubrecht, Zool. pt. 54).

Cerebratulus angusticeps, n.sp. One injured specimen ; obtained also at Station 167A.

ANNELIDA (M'Intosh, Zool. pt. 34).

Hyalinaccia benthaliana, n.sp. One specimen ; obtained also at Station 158.

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- Eumenia reticulata*, n.sp. Several specimens; obtained at no other locality.
Maldanella neo-zealandiæ, n.g., n.sp. One imperfect specimen; obtained at no other locality.
Melinna armandi, n.sp. One specimen; obtained at no other locality.
Lexia neo-zealandiæ, n.sp. One imperfect specimen; obtained at no other locality.
 „ *langerhansi*, n.sp. One imperfect specimen; obtained at no other locality.

OSTRACODA (Brady, Zool. pt. 3).

- Crossophorus imperator*, n.g., n.sp. One specimen; obtained at no other locality.
 Only species of the genus.

AMPHIPODA (Stebbing, Zool. pt. 67).

- Andania abyssorum*, n.sp. One specimen; obtained at no other locality.
Leucothoë tridens, n.sp. One specimen; obtained at no other locality.
Elasmopus subcarinata (Haswell). One specimen; obtained also at Station 161 and Port Jackson.
Gammaropsis thomsoni, n.sp. One specimen; obtained at no other locality.
Podocerus hoeki, n.sp. Two specimens; obtained at no other locality.
Camacho bathyplous, n.g., n.sp. One specimen; obtained at no other locality.
 Only species of the genus.

ISOPODA (Beddard, Zool. pts. 33 and 48).

- Serolis bromleyana*, Willemoes-Suhm, n.sp. Many specimens; obtained also at Stations 156, 164, and 169.
 „ sp (?). Two specimens, species undetermined.
Acanthomunna proteus, n.g., n.sp. One specimen; obtained also at Station 169, 700 fathoms. Only species of the genus.
Munnopsis gracilis, n.sp. One specimen; obtained at no other locality.
Eurycope novæ-zelandiæ, n.sp. Numerous specimens; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

- Benthesicymus brasiliensis*, n.g., n.sp. Two specimens; obtained also at Stations 173, 181, 184, 285, and 323, 315 to 2440 fathoms.
Pontophilus gracilis, n.sp. Six specimens; obtained also at Stations 133, 184, and 198.
Acanthephyra sica, n.sp. Four specimens; for distribution see Station 40.

ANOMURA (Henderson, Zool. pt. 69).

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Pagurodes inarmatus, n.g., n.sp. Five specimens in shells of *Pleurotoma* and *Nassa*; obtained also at Station 146.

Elasmonotus marginatus, n.sp. Two specimens; obtained at no other locality.

PYCNOGONIDA (Hoek, Zool. pt. 10).

Nymphon longicoxa, n.sp. Twelve specimens; obtained at no other locality.

„ *compactum*, n.sp. Two specimens; obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Nassa dissimilis, n.sp. One specimen; obtained at no other locality.

Pleurotoma (Thesbia) membranacea, n.sp. Obtained at no other locality.

„ („) *xanthias*, n.sp. Obtained at no other locality.

FISHES (Günther, Zool. pt. 57).

Macrurus murrayi, n.sp. Five specimens; obtained at no other locality.

Bathysaurus ferox, n.g., n.sp. One specimen; obtained at no other locality.

Chlorophthalmus gracilis, n.sp. One specimen; obtained also at Stations 300 and 335, 1375 and 1425 fathoms.

In addition to the foregoing, the following are recorded in the Station-book:—Sponge, *Palythoa* (on shells inhabited by *Pagurus*), flexible and recurved spine of an Urchin, and Sipunculids (?).

Excluding Protozoa, about 150 specimens of invertebrates and fishes were obtained at this Station, belonging to about 44 species, of which 35 are new to science, including representatives of 8 new genera; 23 of the new species and 3 new genera were not obtained elsewhere.

Willemoes-Suhm writes: “Among the Annelids were a true *Clymene* and a species having apparently a bunch of tentacles around the mouth, or protruding from it, which may be oral branchiæ, as described by Kupffer in *Ammotrypane*. There were specimens of what appeared to be Sipunculids, and a large species of Nemerteans, which is of interest as coming from such deep water. An Ostracode, with the prodigious length of 10 millimetres was, as far as I could see without opening the shell, a typical *Cypridina* [= *Crossophorus imperator*]. Numerous larger and smaller specimens of *Serolis bromleyana* were obtained, but none of them so large as those taken in the south. Great numbers of a *Munnopsis* came up on the net as well as in the bag; some of the females had eggs and young in their pouches. Besides this true *Munnopsis*, there was a species in which not only the pleon, but also the last three

STATION 168.

segments of the pereion, had lost all trace of segmentation, the posterior portion of the body being very slender and much narrower than the segmented anterior portion. There were two specimens of a *Galathea*, which seems to me to be identical with a form first taken between Marion and Crozet Islands at a similar depth. There were several specimens of a *Crangon*, which is apparently not scarce in great depths, having been met with on two previous occasions, and two species of Peneid shrimps, which have been taken often since leaving St. Thomas. One of the Nymphonids had a Campanularian on its legs. An Amphipod, resembling in appearance Kroyer's genus *Unciola*, but distinguished by the absence of legs on the sixth, and of all appendages on the seventh, segments of the pereion, was taken; it had breeding lamellæ on the second to the fifth pairs of legs, and branchiæ on the third to the sixth pairs."

ORGANISMS FROM
THE DEPOSIT.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.); the pelagic species, which make up about 47 per cent. of the carbonate of lime present in the deposit, are marked thus × :—

Biloculina comata, Brady.
 " *depressa*, d'Orbigny.
 " " var. *murrhyna*, Schwager.
 " " *serrata*, Brady.
 " *irregularis*, d'Orbigny.
 " *ringens* (Lamarek).
Miliolina circularis (Bornemann).
 " *valvularis* (Reuss).
 " *venusta* (Karrer).
Planispirina celata (Costa).
Cornuspira foliacea (Philippi).
Astrorhiza sp. (?).
Pelosina rotundata, Brady.
 " *variabilis*, Brady.
Bathysiphon filiformis, Sars.
Jaculella acuta, Brady.
Hyperammina ramosa, Brady.
Rhabdammina cornuta, Brady.
 " *linearis*, Brady.
 " sp. (?).
Aschemumella sp. (?).
Rhopax ulunca, Brady.
 " *denticuliformis*, Brady.
 " *diffugiiformis*, Brady.
 " *distans*, Brady.
 " *guttifera*, Brady.
 " *reticulosa*, Brady.
 " *scorpiurus*, Montfort.
Haplophragmium foliaceum, Brady.

Haplophragmium globigeriniforme (Parker and Jones).
 " *latidorsatum* (Bornemann).
 " *scitulum*, Brady.
 " *tenuimargo*, Brady.
 " sp. (?).
Placopsilina bulla, Brady.
Thurammia papillata, Brady.
Hormosina globulifera, Brady.
 " *normani*, Brady.
Ammodiscus charoides (Jones and Parker).
 " *tenuis*, Brady.
Trochammina trullissata, Brady.
Webbina clavata, Jones and Parker.
Cyclammia cancellata, Brady.
 " *orbicularis*, Brady.
Textularia concava (Karrer).
 " *quadrilatera*, Schwager.
Verneuilina propinqua, Brady.
 " *pygmæa* (Egger).
Bulimina aculeata, d'Orbigny.
 " *affinis*, d'Orbigny.
 " *buchiana*, d'Orbigny.
 " *inflata*, Seguenza.
 " *ovata*, d'Orbigny.
Cassidulina sp. (?).
Lagena globosa (Montagu).
 " *gracilis*, Williamson.
 " *hexagona* (Williamson).

<i>Lagena marginata</i> (Walker and Boys).	× <i>Orbulina universa</i> , d'Orbigny.	STATION 168.
„ <i>quadricostulata</i> , Reuss.	× <i>Pullenia obliquiloculata</i> , Parker and Jones.	
„ sp. (?).	„ <i>sphæroides</i> (d'Orbigny).	
<i>Nodosaria communis</i> , d'Orbigny.	<i>Sphæroidina bulloides</i> , d'Orbigny.	
„ <i>lævigata</i> , d'Orbigny.	<i>Truncatulina lobatula</i> (Walker and Jacob) (?).	
„ <i>radicula</i> (Linné).	„ <i>tenera</i> , Brady.	
„ <i>simplex</i> , Silvestri.	„ <i>wuellerstorfi</i> (Schwager).	
„ sp. (?).	× <i>Pulvinulina canariensis</i> , d'Orbigny.	
<i>Cristellaria compressa</i> , d'Orbigny.	× „ <i>crassa</i> (d'Orbigny).	
„ <i>reniformis</i> , d'Orbigny.	„ <i>elegans</i> (d'Orbigny).	
„ <i>rotulata</i> (Lamarck) (?).	× „ <i>melchioriana</i> d'Orbigny.	
<i>Uvigerina angulosa</i> , Williamson.	„ <i>pauperata</i> , Parker and Jones.	
„ <i>asperula</i> , Czjzek.	<i>Rotalia orbicularis</i> , d'Orbigny.	
× <i>Globigerina æquilateralis</i> , Brady.	„ <i>soldanii</i> , d'Orbigny.	
× „ <i>bulloides</i> , d'Orbigny.	<i>Nonionina umbilicatula</i> (Montagu).	
× „ <i>inflata</i> , d'Orbigny.		

The mud contained a large number of rounded pellets, supposed to be the dung of Holothurians or other Echinoderms.

Surface Organisms.—The following species are recorded from the surface at this Station :—

CEPHALOPODA (Hoyle, Zool. pt 44).	TUNICATA (Herdman, Zool. pt. 76).
<i>Calliteuthis reversa</i> , Verrill (?).	<i>Salpa costata</i> - <i>tilesii</i> , Quoy and Gaimard—Cuvier.
	„ n.sp. (?).

Mr. Murray went away in a boat, and shot one specimen of *Diomedea exulans* and two specimens of *Diomedea melanophrys*. There were very few things on the surface, but with a fine net Diatoms, *Peridinium*, small *Globigerinæ* with very long spines, and small Radiolarians, were taken. In the evening the ship passed through a great bank of *Pyrosoma*, which caused a most wonderful exhibition of phosphorescent light on the surface.

Station 169 (Sounding 291), New Zealand to Tongatabu (see Chart 27 and Diagram 12). STATION 169.

July 10, 1874; lat. 37° 34' S., long. 179° 22' E.

Temperature of air at noon, 57°·8; mean for the day, 58°·0.

Temperature of water :—

Surface, ...	58·2	400 fathoms, ...	44·8
100 fathoms, ...	55·2	500 „	43·0
200 „	50·0	600 „	41·5
300 „	46·7	Bottom, ...	40·0

(SUMMARY OF RESULTS CHALL. EXP.—1893).

STATION 169.

Density at 60° F.:—

Surface, ...	1·02636	200 fathoms, ...	1·02573
50 fathoms, ...	1·02608	Bottom, ...	1·02594
100 „	1·02602		

Depth, 700 fathoms; deposit, Blue Mud, containing 4·36 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6.15 A.M. stopped and sounded in 700 fathoms. At 7.30 A.M. put trawl over. At 9 A.M. obtained serial temperatures at intervals of 100 fathoms down to the bottom, and specimens of water. The carbonic acid was determined in water from 50 fathoms, and amounted to 51·1 milligrammes per litre. At 11.30 A.M. hove up trawl, containing a quantity of mud and many specimens. At 11.45 A.M. stopped engines and made sail. *Diomedea exulans*, *Diomedea melanophrys*, Cape pigeons, prions, stormy petrels, and another petrel, noticed about the ship.

Distance at noon from Esperance Rock, 384 miles. Made good 86 miles. Amount of current 9 miles, direction N. 50° E.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station:—

MONAXONIDA.

Cladorhiza pentacrini, Dendy, n.sp. [See *Ann. and Mag. Nat. Hist.*, ser. 5, vol. xx. pp. 279–282, 1887].

PENNATULIDA (Köl liker, Zool. pt. 2).

Kophobelemnion sp. (?). One fragmentary specimen (resembling *Kophobelemnion stelliferum*, var. *durum*, Köl liker).

Protocaulon molle, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

Leptoptilum gracile, n.g., n.sp. Several specimens; obtained at no other locality. Only species of the genus.

HYDROIDA (Allman, Zool. pt. 70).

Cryptolaria gracilis, n.sp. Obtained at no other locality.

Perisiphonia pectinata, n.g., n.sp. Obtained at no other locality.

CRINOIDEA (Carpenter, Zool. pt. 60).

Eudiocrinus semperi, n.g., n.sp. Two specimens; obtained also at Station 164.

Antedon alternata, n.sp. One specimen; obtained also at Stations 170A, 218, and 236, 630 to 1070 fathoms.

OPHIUROIDEA (Lyman, Zool. pt. 14).

STATION 169.

- Ophiozona stellata*, n.sp. Obtained also at Station 168.
Ophioglypha rugosa, n.sp. Obtained at no other locality.
Ophiomusium lymani, Wyville Thomson. For distribution see Station 45.
Ophiactis sp. (?), (young).
Amphiura lanceolata, n.sp. Obtained at no other locality.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Asthenosoma gracile*, n.sp. Obtained also at Stations 184, 200, and 219, 150 to 400 fathoms.
Phormosoma rigidum, n.sp. Obtained at no other locality.
Pourtalesia laguncula, n.sp. Obtained also at Stations 168, 191, 232, and 244.

HOLOTHURIOIDEA (Théel, Zool. pts. 13 and 39).

- Pannychia moseleyi*, n.g., n.sp. One injured specimen; obtained also at Station 164. Only species of the genus.
Ankyroderma marenzelleri, n.sp. One injured specimen; obtained at no other locality.
Trochostoma violaceum, Studer. One specimen; obtained also at Station 149.
,, *albicans*, n.sp., var. *glabra*, nov. One specimen; obtained at no other locality. The species was obtained at Station 45.
Holothuria lactea, n.sp. One specimen; obtained also at Station 78.

NEMERTEA (Hubrecht, Zool. pt. 54).

- Eupolia giardii*, n.g., n.sp. One specimen; obtained at no other locality.
,, *australis*, n.g., n.sp. One specimen; obtained at no other locality.
Cerebratulus macroren, n.sp. One specimen; obtained also at Station 232, 345 fathoms.

GEPHYREA (Selenka, Zool. pt. 36).

- Sternaspis princeps*, n.sp. Two specimens; obtained at no other locality.

ANNELIDA (M'Intosh, Zool. pt. 34).

- Lætmonice producta*, Grube, var. *willemoesi*, nov. Obtained also at Stations 70, 133, 146, and 184.
Polynoë (Macellicephala) mirabilis, n.sp. One specimen; obtained at no other locality.
Lumbriconereis neo-zealandiæ, n.sp. Obtained at no other locality.

STATION 169.

- Nothria tenuisetis*, n.sp. One specimen; obtained also at Station 23 or Station 24
 „ *minuta*, n.sp. One specimen; obtained at no other locality.
Scalibregma inflatum, Rathke, var. (?). One specimen; obtained also at Station 141.
Chatozone pacifica, n.sp. One specimen; obtained at no other locality.
Lanassa sarsi, n.sp. One fragmentary specimen; obtained at no other locality.
Terebellides (?) sp. One specimen.

CIRRIPEDIA (Hoek, Zool. pt. 25).

- Scalpellum intermedium*, n.sp. Two specimens; obtained also at Station 164B.
 „ *elongatum*, n.sp. Two specimens; obtained also at Stations 135 and 164B.
 „ *novæ-zelandiæ*, n.sp. One specimen; obtained at no other locality.

ISOPODA (Beddard, Zool. pts. 33 and 48).

- Serolis bromleyana*, Willemoes-Suhm, n.sp. Obtained also at Stations 156, 164c, and 168.
Acanthomunna proteus, n.g., n.sp. One specimen; obtained also at Station 168.
 Only species of the genus.
Arcturus myops, n.sp. Two specimens; obtained at no other locality.
Paranthura chiltoni, n.sp. One specimen; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

- AcanthePHYRA sica*, n.sp. Three specimens; for distribution see Station 40.
Nematocarcinus serratus, n.sp. One specimen; obtained at no other locality.
 „ *hiatus*, n.sp. One fragmentary specimen; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

- Eupagurus rubricatus*, n.sp. One specimen; obtained at no other locality.

PYCSOGONIDA (Hoek, Zool. pt. 10).

- Oorhynchus aucklandiæ*, n.g., n.sp. One specimen; obtained at no other locality.
 Only species of the genus.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Limopsis lata*, n.sp. Several specimens; obtained at no other locality.

SCAPHOPODA and GASTEROPODA (Watson, Zool. pt. 42).

- Dentalium diarrhoeæ*, n.sp. Obtained at no other locality.

Cadulus colubridens, n.sp. Obtained at no other locality.

STATION 169.

Nassa (Tritia) ephamilla, n.sp. Obtained at no other locality.

Pleurotoma ischna, n.sp. Obtained at no other locality.

„ (*Surcula*) *gyssata*, n.sp. Two specimens; obtained at no other locality.

„ (*Genota*) *engonia*, n.sp. (?). One specimen; obtained also at Station 232, 345 fathoms.

„ (*Bela*) *ula*, n.sp. One specimen; obtained at no other locality.

„ (*Spirotropis*) *bulbacea*, n.sp. Obtained at no other locality.

Natica amphiala, n.sp. Obtained at no other locality.

„ (*Amauropsis*) *apora*, n.sp. (?). One specimen; obtained also at Station 191, 800 fathoms.

Odostomia hyphala, n.sp. Obtained at no other locality.

Utriculus (Tornatina) pachys, n.sp. Obtained at no other locality.

FISHES (Günther, Zool. pt. 57).

Macrurus parallelus, n.sp. One specimen; obtained also at Stations 170A, 171, 232, and 235, 345 to 630 fathoms. Recorded subsequently from Indian Ocean ("Investigator").

„ *serrulatus*, n.sp. Three specimens; obtained at no other locality.

Trachyrhynchus longirostris, n.sp. Two specimens; obtained at no other locality.

Bathygadus cottoides, n.g., n.sp. One specimen; obtained also at Stations 170, 170A, and 171, 520 to 630 fathoms. Recorded subsequently from Indian Ocean ("Investigator") (?).

Gonostoma microdon, n.sp. Five specimens; for distribution see Station 23.

In addition to the foregoing, the following are recorded in the Station-book:—*Stephanoscyphus*, Polyps, Starfish, *Sipunculus* (?), *Arca pectunculoides*, and small Polyzoon.

Excluding Protozoa, about 120 specimens of invertebrates and fishes were obtained at this Station, belonging to about 70 species, of which 58 are new to science, including representatives of 9 new genera; 38 of the new species and 3 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "The trawl brought up a peculiar beautiful Actinian which, according to Moseley who has made a drawing of it, belongs to the floating Minyadæ. The small Campanularian, found at the last Station on the leg of a *Nymphon*, was to-day taken parasitic on *Limopsis*. A fine head and half of the body of a *Myriotrochus* was found in the trawl; only two species of this genus are known, from Greenland, Labrador, and Polar seas. Among the Annelids were two fine specimens of a normal

STATION 169.

Sternaspis, a genus now generally considered as an Annelid, but formerly, on account of its twisted intestine, placed among the Sipunculids, and found in Europe, the Mediterranean, and the far north. Most of the Crustaceans were identical with those taken on the previous day. There were a few specimens of a remarkable Polyzoon."

ORGANISMS FROM
THE DEPOSITS.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.); the pelagic species, which make up about 23 per cent. of the carbonate of lime present in the deposit, are marked thus ×:—

<i>Biloculina ringens</i> (Lamarck).	<i>Trochammina squamata</i> , Jones and Parker.
„ <i>sphæra</i> , d'Orbigny.	„ <i>trullissata</i> , Brady.
<i>Mikolima circularis</i> (Bornemann).	<i>Webbina clavata</i> , Jones and Parker.
„ <i>tricarinata</i> (d'Orbigny).	„ <i>hemisphærica</i> , Jones, Parker, and Brady.
<i>Planispirina sigmoidea</i> , Brady.	<i>Textularia aspera</i> , Brady.
<i>Cornuspira foliacea</i> (Philippi).	„ <i>quadrilatera</i> , Schwager.
<i>Astrorhiza</i> sp. (?).	„ <i>sagittula</i> , DeFrance.
<i>Pelosina cylindrica</i> , Brady.	<i>Gaudryina pupoides</i> , d'Orbigny.
„ <i>rotundata</i> , Brady.	<i>Bulimina buchiana</i> , d'Orbigny.
„ <i>variabilis</i> , Brady.	„ <i>pyrula</i> , d'Orbigny.
<i>Technitella melo</i> , Norman.	<i>Chilostomella ovoidea</i> , Reuss.
<i>Bathysiphon filiformis</i> , Sars.	<i>Lagena marginata</i> (Walker and Boys).
„ sp. (?).	<i>Nodosaria obliqua</i> (Linné).
<i>Psammosphæra fusca</i> , Schulze.	„ <i>soluta</i> , Reuss.
<i>Sorosphæra</i> sp. (?).	<i>Vaginulina spinigera</i> , Brady.
<i>Hyperammina friabilis</i> , Brady.	<i>Cristellaria cultrata</i> (Montfort).
„ <i>ramosa</i> , Brady.	„ <i>rotulata</i> (Lamarck).
„ sp. (?).	„ sp. (?).
<i>Rhabdammina discreta</i> , Brady.	<i>Uvigerina angulosa</i> , Williamson.
„ <i>linearis</i> , Brady.	„ <i>asperula</i> , Czjzek.
<i>Reophax dentaliniiformis</i> , Brady.	<i>Ramulina</i> sp. (?).
„ <i>diffugiiformis</i> , Brady.	× <i>Globigerina squilateralis</i> , Brady.
„ <i>distans</i> , Brady.	× „ <i>bulloides</i> , d'Orbigny.
<i>Haplophragmium emaciatum</i> , Brady.	× „ <i>inflata</i> , d'Orbigny.
„ <i>foliaceum</i> , Brady.	× <i>Orbulina universa</i> , d'Orbigny.
„ <i>globigeriniiforme</i> (Parker and Jones).	<i>Pullenia quinqueloba</i> , Reuss.
„ <i>glomeratum</i> , Brady.	<i>Sphæroidina bulloides</i> , d'Orbigny.
„ <i>latilobatum</i> (Bornemann).	<i>Truncatulina lobatula</i> (Walker and Jacob).
„ <i>nanum</i> , Brady.	× <i>Pulvinulina crassa</i> (d'Orbigny).
<i>Hormonina globulifera</i> , Brady.	„ <i>elegans</i> (d'Orbigny).
„ <i>monile</i> , Brady.	× „ <i>micheliniana</i> (d'Orbigny).
<i>Aminodiscus incertus</i> (d'Orbigny).	„ <i>pauperata</i> , Parker and Jones.
„ <i>tenuis</i> , Brady.	<i>Rotalia clathrata</i> , Brady.

Calodrymus lappulatus and *Cælothauma duodenum* were observed among the Radiolaria in this deposit.

Surface Organisms.—The following species of Radiolaria are recorded from the surface at this Station :—

RADIOLARIA (Haeckel, Zool. pt. 40).	<i>Hexaplagia collaris</i> , Haeckel.
<i>Stylatractus disetanius</i> , Haeckel.	<i>Lampromitra huxleyi</i> , Haeckel.
<i>Stauracantha orthostaura</i> , Haeckel.	<i>Aulodendron australe</i> , Haeckel.
<i>Pristacantha polyodon</i> , Haeckel.	<i>Castanidium bromleyi</i> , Haeckel.
<i>Dodecaspis trizonia</i> , Haeckel.	

Stations 170 and 170A (Soundings 292 and 293), New Zealand to Tongatabu (see Chart 27 and Diagram 12). STATIONS 170 AND 170A.

July 14, 1874 ; lat. 29° 55' S., long. 178° 14' W.

Temperature of air at noon, 63°·8 ; mean for the day, 63°·1.

Temperature of water :—

Surface, ...	65·0	300 fathoms, ...	49·0
50 fathoms, ...	62·0	350 „	47·4
100 „	60·5	400 „	45·7
150 „	56·2	450 „	44·2
200 „	53·0	500 „	43·0
250 „	50·8		

Density at 60° F. :—

Surface, ...	1·02644	300 fathoms, ...	1·02575
100 fathoms, ...	1·02635	400 „	1·02573
200 „	1·02611		

At 6.30 A.M. shortened and furled sails, and got up steam. At 7 A.M. sounded in 520 fathoms, deposit Volcanic Mud (Station 170). Put trawl over. At 10 A.M. dingey went away with naturalists for surface collecting. At 10.40 A.M. hove up trawl with numerous specimens. At 11.45 A.M. put trawl over again, and sounded in 630 fathoms, deposit Volcanic Mud, bottom temperature 39°·5 (Station 170A), midway between Macaulay and Raoul or Sunday Islands. Obtained serial temperatures at intervals of 50 fathoms down to 500 fathoms. At 4.30 P.M. hove up trawl containing many specimens, and at 4.35 P.M. proceeded under steam. No albatrosses were noticed to-day, and yesterday only one specimen of *Diomedea exulans* and two specimens of *Diomedea melanophrys* were observed, so that this is probably the boundary of the albatross region. Cape pigeons, small black and white petrels, not bigger than stormy petrels, and large birds

STATIONS 170
AND 170A.

with white heads, either stinkers, *Procellaria gigantea*, or young of *Diomedea exulans*, were seen.

Distance at noon from the summit of Raoul Island, 33 miles. Made good 99 miles. Amount of current 30 miles, direction N. 12° E.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at these Stations:—

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Myxilla frondosa, n.sp. One specimen (520 fathoms); obtained at no other locality.

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Walteria flemmingii, n.g., n.sp. One fragmentary specimen (630 fathoms); obtained at no other locality. Only species of the genus.

Euryplegma auriculare, n.g., n.sp. Two fragmentary specimens (630 fathoms); obtained at no other locality. Only species of the genus.

Poliopogon gigas, n.g., n.sp. Large fragmentary specimen (630 fathoms); obtained at no other locality.

Farrea ocea (Bowerbank), Carter. One specimen (630 fathoms); obtained also at Stations 24 and 207.

Chonelasma lamella, n.g., n.sp. One fragmentary specimen (630 fathoms); obtained also at Stations 56 and 148A.

„ *hamatum*, n.g., n.sp. One specimen (630 fathoms); obtained at no other locality.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Dasygorgia expansa, n.sp. Fragments (520 fathoms); obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Stylaster erubescens, Pourtalès (?). One specimen (520 fathoms); obtained at no other locality by the Challenger. Recorded from Atlantic coast of North America.

„ *gracilis*, M.-Edwards and Haime. (520 fathoms); obtained also at Philippines, 10 and 30 fathoms. Recorded from Australia.

Conopora tenuis, n.g., n.sp. (520 fathoms); obtained at no other locality. Only species of the genus.

Caryophyllia maculata (Portalès). One specimen (630 fathoms); obtained also at Station 122.

Caryophyllia lamellifera, n.sp. Two specimens (630 fathoms); obtained at no other locality. STATIONS 170 AND 170A.

CRINOIDEA (Carpenter, Zool. pts. 32 and 60).

Pentacrinus naresianus, n.sp. Two specimens and fragment (520 and 630 fathoms); obtained also at Stations 171, 175, 210 (?), and 214, 375 to 1350 fathoms.

Metacrinus varians, n.g., n.sp. (?). One specimen (630 fathoms); obtained also at Station 214, 500 fathoms.

„ *wywillii*, n.g., n.sp. Two specimens (630 fathoms); obtained also at Station 214, 500 fathoms.

„ *nodosus*, n.g., n.sp. Three specimens (630 fathoms); obtained at no other locality.

Antedon incerta, n.sp. One specimen (630 fathoms); obtained at no other locality.

„ *breviradia*, n.sp. Five specimens (630 fathoms); obtained also at Station 175, 1350 fathoms.

„ *echinata*, n.sp. One specimen (630 fathoms); obtained at no other locality.

„ *basicurva*, n.sp. Several specimens (630 fathoms); obtained also at Station 175 (?), 1350 fathoms.

„ *incisa*, n.sp. Four specimens and fragments (630 fathoms); obtained also at Station 174, 210, 255, or 610 fathoms.

„ *alternata*, n.sp. Two specimens (630 fathoms); obtained also at Stations 169, 218, and 236.

„ *inæqualis*, n.sp. Twelve specimens (630 fathoms); obtained also at Stations 174 and 175, 210 to 1350 fathoms.

ASTEROIDEA (Sladen, Zool. pt. 51).

Solaster torulatus, n.sp. (520 fathoms); obtained at no other locality.

Cribrella sufflata, n.sp. One specimen (520 fathoms); obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioceramis (?) *clausa*, n.sp. (630 fathoms); obtained also at Station 171, 600 fathoms.

„ (?) *obstricta*, n.sp. (630 fathoms); obtained also at Station 192, 129 fathoms.

Ophiactis cuspidata, n.sp. (520 fathoms); obtained also at Station 171, 600 fathoms.

Ophiacantha cornuta, n.sp. (520 fathoms); obtained also at Station 171, 600 fathoms.

Ophiomitra plicata, n.sp. (630 fathoms); obtained also at Stations 205 and 214, 1050 and 500 fathoms.

STATIONS 170
AND 170A.

- Astroschema horridum*, n.sp. (600 fathoms ? [630]); obtained at no other locality.
 „ *salix*, n.sp. (520 fathoms); obtained at no other locality.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Salenia hastigera*, n.sp. (630 fathoms); for distribution see Station 106.
Aspidodiadema tonsum, n.g., n.sp. (630 fathoms); obtained also at Stations 124, 171, and 209.
Trigonocidaris monolini, n.sp. One specimen (520 fathoms); obtained at no other locality.
Echinus acutus, Lamarck. (630 fathoms); obtained also at Station 343, 425 fathoms.

ANNELIDA (M'Intosh, Zool. pt. 34).

- Lagisca* (?) *kermadecensis*, n.sp. One fragmentary specimen (520 fathoms); obtained at no other locality.
Nicidon balfouriana, n.sp. One fragmentary specimen (520 fathoms); obtained at no other locality.

MYZOSTOMIDA (Graff, Zool. pt. 27).

- Myzostoma tenuispinum*, n.sp. (On *Antedon inæqualis*, *A. basicurva*, and *A. incisa*).
 „ *willemoesii*, n.sp. (On *Antedon basicurva* and *A. inæqualis*).
 „ *murrayi*, n.sp. (On *Antedon breviradia*).

CIRRIPIEDIA (Hoek, Zool. pt. 25).

- Scalpellum acutum*, n.sp. Three specimens (520 and 630 fathoms); obtained also at Station 78.
Verruca sulcata, n.sp. One specimen (520 or 630 fathoms); obtained at no other locality.

AMPHIPODA (Stebbing, Zool. pt. 67).

- Euonyx normani*, n.sp. One specimen (630 fathoms); obtained at no other locality.
Podoceropsis kermadeci, n.sp. One fragmentary specimen (630 fathoms); obtained at no other locality.
Cystisoma spinosum (Fabricius). One specimen (630 fathoms); for distribution see Station V.

MACRURA (Spence Bate, Zool. pt. 52).

- Eiconaxius parvus*, n.g., n.sp. One specimen (520 fathoms); obtained at no other locality.
Polycheles helleri, n.sp. One specimen (520 fathoms) obtained also at Station 218, 1070 fathoms.

- Pentacheles euthrix*, n.g., n.sp. (*Willemæsia euthrix*, Willemoes-Suhm, MS.). STATIONS 170 AND 170A.
Two specimens (520 fathoms); obtained also at Station 173, 315 fathoms.
- Haliporus obliquirostris*, n.g., n.sp. Numerous specimens (520 fathoms); obtained at no other locality.
- Hemipenæus semidentatus*, n.g., n.sp. Three specimens (520 fathoms); obtained also at Stations 171 and 194, 600 and 200 fathoms. Recorded subsequently from Indian Ocean ("Investigator").
- Benthesicymus altus*, n.g., n.sp. One specimen (520 fathoms); for distribution see Station 133.
- Sergestes krøyeri*, n.sp. One specimen (520 fathoms); obtained at no other locality.
- Plesionika semilævis*, n.g., n.sp. Six specimens (520 fathoms); obtained also at Stations 164B (?), 173, and 200.
- Acanthephyra sica*, n.sp. One specimen (520 fathoms); for distribution see Station 40.
- „ *brachytelsonis*, n.sp. Eight specimens (520 and 630 fathoms); obtained also at Stations 171, 194, 214, 232, 236, and 318, 200 to 2040 fathoms. Recorded subsequently from Indian Ocean ("Investigator").

ANOMURA (Henderson, Zool. pt. 69).

- Uroptychus spinimarginatus*, n.sp. Two specimens (520 fathoms); obtained also at Station 214, 500 fathoms.
- „ *australis*, n.sp. One specimen (520 fathoms); obtained also at Stations 164B, 171, and 194A.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Spondylus ostreoides*, n.sp. One specimen (520 fathoms); obtained at no other locality.

NUDIBRANCHIATA (Bergh, Zool. pt. 26).

- Euplocamus pacificus*, n.sp. One specimen (630 fathoms); obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

- Amphitretus pelagicus*, n.g., n.sp. One specimen (520 fathoms); obtained at no other locality. Only species of the genus.
- Eledone verrucosa*, Verrill. One specimen (630 fathoms); obtained at no other locality by the Challenger. Recorded from North-West Atlantic.

STATIONS 170
AND 170A.

POLYZOA (Busk, Zool. pt. 30).

Carbasea moseleyi, n.sp. One specimen (520 fathoms); obtained at no other locality.

TUNICATA (Herdman, Zool. pts. 17 and 76).

Culeolus wyville-thomsoni, n.g., n.sp. One specimen (630 fathoms); obtained at no other locality.

Pyrosoma sp. (?). One specimen (520 fathoms?).

FISHES (Günther, Zool. pt. 57).

Macrurus parallelus, n.sp. Three specimens (630 fathoms); obtained also at Stations 169, 171, 232, and 235.

„ *rudis*, n.sp. Five specimens (520 and 630 fathoms); obtained also at Station 171, 600 fathoms.

„ *crassiceps*, n.sp. One specimen (520 fathoms); obtained also at Station 171, 600 fathoms.

„ *denticulatus*, Richards. Five specimens (520 fathoms); obtained also at Station 166.

Bathygadus cottoides, n.g., n.sp. Seven specimens (520 and 630 fathoms); obtained also at Stations 169 and 171.

Gonostoma microdon, n.sp. Two specimens (520 fathoms); for distribution see Station 23.

Bathypterois longifilis, n.g., n.sp. Two specimens (520 and 630 fathoms); obtained at no other locality.

Scopelus macrolepidotus (Johnston). Six specimens (520 and 630 fathoms); obtained at no other locality by the Challenger. Recorded from Madeira.

In addition to the foregoing, the following are recorded in the Station-book:—Large specimen of *Mopsa*, several Pennatulids (one of them containing generally a *Galathea*), several Polyps, Polyzoa, including a few very large specimens of *Lepralia*.

Excluding Protozoa, over 200 specimens of invertebrates and fishes were obtained at these Stations, belonging to about 79 species, of which 64 are new to science, including representatives of 17 new genera; 30 of the new species and 4 new genera were not obtained elsewhere. From the deeper water (Station 170a, 630 fathoms) about 100 specimens were obtained, belonging to 43 species, of which 37 are new to science, including representatives of 9 new genera; 14 of the new species and 2 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "On the pinnulæ of the Comatulæ we found *Myzostoma* under rather peculiar conditions. Some of the pinnulæ had enlarged by excrescence and were rolled up so as to form a cavity, in which, in two cases, a larger and smaller *Myzostoma* were found. This reminds me very much of Trematodes, which, like *Monostomum faba* in the skin of birds, live always in cases or sacs in pairs, one individual being much larger than the other, the one acting probably as a male and the other only as a female; this leads in some cases, as in *Distomum okeni* on the branchiæ of *Brama rayi*, to a perfect diversity of sexes. Perhaps there is something very similar in *Myzostoma*, which is hermaphroditic and has many affinities with the Trematodes. Among the higher Decapods there were an *Alpheus*, never got before in deep water, and two males of a new species of *Willemæsia* [= *Pentacheles euthrix*]. This genus has not made its appearance since we left the Southern Atlantic, where in a depth of 1900 fathoms we got *Willemæsia leptodactyla*, to which this new species is most closely allied, differing from it in being smaller and in having two excisions of the red chitinous upper layer of the carapace where one would expect to find the eyes. A very large-celled *Lepralia* was observed on the pumice-stones."

Surface Organisms.—The following species are recorded from the surface at this place:—

ORGANISMS FROM
THE SURFACE.

COPEPODA (Brady, Zool. pt. 23).—Parasitic
on shark.

Pandarus cranchii, Leach.

„ *satyrus*, Dana.

Nogagus latreillii, Leach.

PTEROPODA (Pelseneer, Zool. pt. 58).

Halopsyche gaudichaudi (Souleyet).

FISHES (Günther, Zool. pt. 78).

Carcharias lamia, Risso.

Lirus porosus (Richards), (young).

In addition, the following are recorded in the note-books:—*Diphyes*, *Corycæus*, *Saphirina*, and *Pyrosoma*.

Moseley writes: "A shark [*Carcharias lamia*] was caught; four or five small pilot fish were about it. On it were numerous specimens of *Caligus*, a few of which again had a *Lepas* on them often almost as big as themselves. The *Caligi* had a pink colouring matter, giving an absorption band. On the shark being skinned I noticed that a layer of superficial or skin muscles, only about $\frac{1}{4}$ inch thick, was coloured dark red like mammalian muscle, the main muscular mass being pale, almost white; this condition is comparable to that in the marine Gasteropods. Murray, on going out in the dingey, met with floating seaweed, apparently a *Fucus* with large vesicles, like *Fucus nodosus*. In these masses were a small fish (*Lirus porosus*) and numerous crabs (*Nautilograpsus*), mimicking the colour

STATIONS 170
AND 170A.

of the weed in a remarkable manner. In the tow-nets were small *Salpæ*, soft transparent Pteropods, Calanids, Cypridinids, and a young Terebellid. A large *Salpa* and Medusa were in the trawl."

STATION 171.

Station 171 (Sounding 294), New Zealand to Tongatabu (see Chart 27 and Diagram 12).

July 15, 1874; lat. 28° 33' S., long. 177° 50' W.

Temperature of air at noon, 66°·5; mean for the day, 66°·5.

Temperature of water at surface, 66°·5; bottom, 39°·5.

Density at 60° F. at surface, 1·02685.

Depth, 600 fathoms; deposit, Volcanic Mud.

At 6.30 A.M. stopped and sounded in 600 fathoms. Put trawl over. At 9.40 A.M. hove up trawl with many fragments of pumice, and numerous specimens. At 10 A.M. made all plain sail. The carbonic acid was determined in water from the surface, and amounted to 41·2 milligrammes per litre. In the course of the morning observed a large whale close to the ship, also a Cape pigeon, and a few white-breasted petrels.

Distance at noon from Eooa Island, Tongatabu, 446 miles; from La Rance Bank, 263 miles. Made good 85 miles. Amount of current 8 miles, direction N. 27° E.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Aulochone cylindrica, n.g., n.sp. One specimen; obtained at no other locality.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Dasygorgia acanthella, n.sp. One specimen; obtained at no other locality.

„ *acillaris*, n.sp. One specimen; obtained also at Station 201, 82 to 102 fathoms.

Calyptraphora wyvillei, n.sp. Fragment of stem; obtained at no other locality.

Stachyodes regularis, n.g., n.sp. Several fragments; obtained at no other locality.
Only species of the genus.

Thouarella moseleyi, n.sp. One specimen; obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Stylaster laevis, Studer (?). One dead specimen; obtained at no other locality by the Challenger. Recorded from Three King Islands.

Stenohelia profunda, n.sp. Obtained also at Station 23.

STATION 171.

Cryptohelia pudica, M.-Edwards and Haime. For distribution see Station 3.

CRINOIDEA (Carpenter, Zool. pt. 32).

Pentacrinus alternicirrus, n.sp. One specimen; obtained also at Stations 210 (?) and 214, 375 and 500 fathoms.

„ *naresianus*, n.sp. Fragments; obtained also at Stations 170, 170A, 175, 210 (?), and 214.

ASTEROIDEA (Sladen, Zool. pt. 51).

Freyella polycnema, n.sp. A few fragments; obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioceramis (?) *clausa*, n.sp. Obtained also at Station 170.

Ophiomusium scalare, n.sp. Obtained at no other locality.

Ophiophyllum petilum, n.g., n.sp. Young specimen; obtained also at Station 174, 210 to 610 fathoms. Only species of the genus.

Ophiactis flexuosa, n.sp. Obtained also at Station 142.

„ *cuspidata*, n.sp. Obtained also at Station 170.

„ *nama*, n.sp. Obtained also at Station 174, 210 to 610 fathoms.

Amphiura argentea, n.sp. Obtained at no other locality.

„ *canescens*, n.sp. Obtained at no other locality.

Ophiochiton lentus, n.g., n.sp. Obtained at no other locality.

Ophiacantha vepratrica, n.sp. Obtained at no other locality.

„ *cornuta*, n.sp. Obtained also at Station 170.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Salenia hastigera, n.sp. For distribution see Station 106.

Aspidodiadema tonsum, n.g., n.sp. Obtained also at Stations 124, 170, and 209.

ENTOZOA (Linstow, Zool. pt. 71).

Ascaris macruri, n.sp. Two specimens (parasitic on *Macrurus rudis*).

ANNELIDA (M'Intosh, Zool. pt. 34).

Polynoë magnipalpa, n.sp. Obtained at no other locality.

Terebella kermadecensis, n.sp. One fragmentary specimen; obtained at no other locality.

STATION 171.

COPEPODA (Brady, Zool. pt. 23).

Chondracanthus (?) *macrurus*, n.sp. One specimen (parasitic on *Macrurus*).

SCHIZOPODA (Sars, Zool. pt. 37).

Gnathophausia zoëa, Willemoes-Suhm, n.g., n.sp. Two specimens; obtained also at Stations 73, 106, and 126.

MACRURA (Spence Bate, Zool. pt. 52).

Eiconaxius kermadeci, n.g., n.sp. Several specimens; obtained at no other locality.

Hemipenæus semidentatus, n.g., n.sp. One specimen; obtained also at Stations 170 and 194.

Benthesicymus altus, n.g., n.sp. Numerous specimens; for distribution see Station 123.

Glyphocrangon regalis, n.sp. One fragmentary specimen; obtained also at Stations 173 and 194, 315 and 200 fathoms.

Acantheephyra brachytelsonis, n.sp. One specimen; obtained also at Stations 170, 194, 214, 232, 236, and 318.

Nematocarcinus undulatipes, n.sp. Three specimens; obtained also at Stations 194, 200, and 214, 200 to 500 fathoms.

„ *gracilis*, n.sp. One specimen; obtained also at Station 174c, 610 fathoms.

Stylodactylus discissipes, n.sp. Two specimens; obtained at no other locality.

„ *orientalis*, n.sp. One specimen; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Munida microphthalma, M.-Edwards. One specimen; obtained also at Stations 24 and 343.

Uroptychus politus, n.sp. Two specimens; obtained at no other locality.

„ *australis*, n.sp. One specimen; obtained also at Stations 164B, 170, and 194A.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Pecten kermadecensis, n.sp. Two valves; obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Murex (*Phyllonotus*) *zelandicus*, Quoy and Gaimard. Obtained also at Stations 167A and 172.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Cirroteuthis meangensis, n.sp. One specimen; obtained also at Station 214, 500 fathoms.

BRACHIOPODA (Davidson, Zool. pt. 1).

STATION 171.

Terebratulina (?) *murrayi*, n.sp. Twelve specimens; obtained at no other locality.

FISHES (Günther, Zool. pt. 57).

Macrurus parallelus, n.sp. Two specimens; obtained also at Stations 169, 170, 232, and 235.

„ *rudis*, n.sp. Three specimens; obtained also at Station 170.

„ *crassiceps*, n.sp. One specimen; obtained also at Station 170.

Bathygadus cottoides, n.g., n.sp. Six specimens; obtained also at Stations 169 and 170.

Sternoptyx diaphana (Herm.). Two specimens; for distribution see Station 101.

Gonostoma microdon, n.sp. One specimen; for distribution see Station 23.

In addition to the foregoing, the following are recorded in the Station-book:—*Aphrocallistes bocagei*, Pennatulids, several Comatulæ, *Archaster*, *Solaster*, and several Polyzoa. The vertebral column of a fish, of a very delicate structure, was found in the trawl, all the soft parts having been washed away in hauling up.

Excluding Protozoa, about 140 specimens of invertebrates and fishes were obtained at this Station, belonging to about 60 species, of which 47 are new to science, including representatives of 10 new genera; 21 of the new species and 1 new genus were not obtained elsewhere.

Willemoes-Suhm writes: “The fauna was on the whole the same as on the previous day. Among the shrimps was a new spiny form not seen before, and two specimens of *Gnathophausia zoëa*, identical with those taken in the Atlantic and not seen since leaving the South Atlantic, except that in the Antarctic we got the skin of a *Gnathophausia*, which could not be identified with any of the three described species. A large *Macrurus* had *Ascarides* in its intestine, two of which left it when in the tub, and two *Lernæans* on its gills.”

Surface Organisms.—The following species is recorded from the surface at this Station:—

ORGANISMS FROM
SURFACE-NETS.

RADIOLARIA (Haeckel, Zool. pt. 40).

Thalassicolla australis, Haeckel.

In addition, the following are recorded in the note-books:—Foraminifera (*Globigerina* with spines and *Pulvinulina*), *Sagitta*, Copepods, pelagic Gasteropods, Pteropods, and *Appendicularia*. A specimen of *Pulvinulina micheliniana* was noticed with a bag-like arrangement composed of the most transparent jelly-like matter, the shell being completely surrounded with yellow coloured granular protoplasm.

STATION 171A.

Station 171A (Sounding 295), New Zealand to Tongatabu (see Chart 27 and Diagram 12).

July 17, 1874; lat. $25^{\circ} 5' S.$, long. $172^{\circ} 56' W.$

Temperature of air at noon, $72^{\circ} 3$; mean for the day, $70^{\circ} 9$.

Temperature of water :—

Surface, ...	72.0	800 fathoms, ...	37.2
100 fathoms, ...	67.6	900 "	36.9
200 "	59.2	1000 "	36.7
300 "	50.4	1100 "	36.4
400 "	44.0	1200 "	36.2
500 "	41.3	1300 "	36.0
600 "	39.2	Bottom, ...	34.3
700 "	37.9		

Density at $60^{\circ} F.$:—

Surface, ...	1.02642	400 fathoms, ...	1.02576
100 fathoms, ...	1.02635	Bottom, ...	1.02626
200 "	1.02646		

Depth, 2900 fathoms; deposit, Red Clay with pumice, containing no carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 8.30 A.M. got up steam. At 9 A.M. shortened and furled sails, proceeded under steam, and sounded in 2900 fathoms. Obtained serial temperatures at intervals of 100 fathoms down to 1300 fathoms. At 1.20 P.M. completed heaving in line, and at 1.30 P.M. made sail. At 6 P.M. got up steam, and at 6.30 P.M. proceeded under steam.

Distance at noon from Eooa Island, 248 miles. Made good 126 miles. Amount of current 28 miles, direction S. $52^{\circ} E.$

AT TONGATABU

The Challenger arrived at Tongatabu at 9 A.M. on July 19, remaining there till 8 A.M. on July 22, 1874 (for description of Tongatabu see *Narr. Chall. Exp.*, vol. i. pp. 477-486).

STATIONS 172
AND 172A
(TONGATABU)

Stations 172 and 172A (Soundings 296 and 297), off Tongatabu (see Chart 28).

July 22, 1874.

Temperature of air at noon, $71^{\circ} 0$; mean for the day, $69^{\circ} 7$.

Temperature of water at surface, $75^{\circ} 0$.

At 7 A.M. got up steam. At 7.50 A.M. weighed anchor and proceeded out of Tongatabu Harbour, passing between Mallenoh and Attataa Islands. At 10 A.M. stopped and



sounded in 18 fathoms, deposit Coral Sand, containing 90.70 per cent. of carbonate of lime (Station 172). Put dredge over. At 11 A.M. hove up dredge, containing many specimens, and proceeded. At 11.20 A.M. stopped and sounded in 240 fathoms, deposit Coral Sand, containing 86.44 per cent. of carbonate of lime (Station 172A). Put over dredge, which came up at 12.10 P.M. with several specimens. Proceeded under steam.

The following species are recorded in the Zoological Reports from the dredge at these two Stations; the great majority come from the shallower depth (18 fathoms), the depth being given for those from the greater depth (240 fathoms):—

ANIMALS FROM
TONGATABU.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Sarcophytum tongatabuensis, n.sp. One specimen; obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Cycloseris tenuis (Dana). Obtained at no other locality by the Challenger. Recorded from the Pacific.

REEF CORALS (Quelch, Zool. pt. 46).

Stylophora prostrata, Klunzinger. Obtained also at Fiji.

Pocillopora suffruticosa, Verrill. Obtained at no other locality by the Challenger.

Caulastraea distorta, Dana. Obtained at no other locality by the Challenger.

Cæloria leptoticha, Klunzinger. Obtained at no other locality by the Challenger.

Pavonia divaricata, Lamarck. Obtained at no other locality by the Challenger.

„ *crassa*, Dana. Obtained at no other locality by the Challenger.

Psammocora obtusangula (Lamarck). Obtained at no other locality by the Challenger.

Madrepora pocillifera, Lamarck. Obtained also at Fiji and New Hebrides.

Turbinaria brassica (Dana). Obtained at no other locality by the Challenger.

Porites arenosa (Esper). Obtained also at Fiji, Banda, and Tahiti.

CRINOIDEA (Carpenter, Zool. pt. 60).

Antedon regalis, n.sp. One specimen; obtained at no other locality.

Actinometra quadrata, n.sp. Obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Linckia pacifica, Gray, var. *diplax*, Müller and Troschel. Obtained also at Fiji.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiothrix propinqua, Lyman (?) (red variety). Obtained also at Fiji and Philippines (?).

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Ophiothrix trilineata, Lütken. Obtained at no other locality by the Challenger.

Ophiomyxa australis, Lütken. For distribution see Station 109.

Ophiopyrgus wyville-thomsoni, n.g., n.sp. One specimen (240 fathoms); obtained at no other locality. Only species of the genus.

Ophiocoris pulverulenta, n.sp. (240 fathoms); obtained at no other locality.

Ophiocoma scolopendrina, Agassiz. Obtained also at Simon's Bay, Cape, Fiji, and Philippines.

Ophiomastix sp. (?), young.

Ophiothrix longipeda, Müller and Troschel (?). Obtained also at Stations 186, 188, Ternate, Amboina, and Philippines, shore to 100 fathoms.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Asthenosoma coriaceum, n.sp. (18 and 240 fathoms); obtained also at Station 173, 310 to 315 fathoms.

Echinometra lucunter (Leske). Obtained also at Fiji, Philippines, Sandwich Islands, and Tahiti.

Peronella decagonalis (Lesson). Obtained also at Stations 173, 186, 188, 190, 192, 208, 212, 219, Torres Strait, Amboina, and Tahiti, 8 to 315 fathoms.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Stichopus chloronotus, Brandt. One specimen; obtained also at Fiji. Recorded from Indian and Pacific Oceans.

Holothuria vagabunda, Selenka. One specimen; obtained also at Fiji and Philippines. Recorded from Indian and Pacific Oceans.

ANNELIDA (M'Intosh, Zool. pt. 34).

Thalenessa oculata, n.sp. One imperfect specimen; obtained also at Station 162.

Hesione pacifica, n.sp. One specimen; obtained at no other locality.

Nereis (*Platynereis*) *tongatabuensis*, n.sp. One specimen; obtained at no other locality.

OSTRACODA (Brady, Zool. pt. 3).

Bythocypris (?) *compressa*, n.g., n.sp. One specimen; obtained at no other locality.

Bairdia woodwardiana, n.sp. Six specimens; obtained at no other locality.

crosskeiana, Brady. Obtained also at Admiralty and Sandwich Islands. Recorded from Mediterranean.

Cythere cancellata, Brady. Obtained also at Station 187, 6 to 8 fathoms. TONGATABU.

Recorded from Java.

„ *convoluta*, Brady. Obtained also at Sandwich Islands, 40 fathoms.

Recorded from Mauritius.

Loxoconcha avellana, Brady. Obtained also at Port Jackson.

Xestoleberis nana, n.sp. Obtained at no other locality.

„ *variegata*, n.sp. Obtained also at Stations 93 and 94.

Cytherella cribrosa, n.sp. Obtained at no other locality.

AMPHIPODA (Stebbing, Zool. pt. 67).

Platyscelus rissoinæ, Spence Bate. One specimen (240 fathoms); obtained at no other locality by the Challenger.

MACRURA (Spence Bate, Zool. pt. 52).

Alpheus avarus, Fabricius. Two specimens; obtained also at Station 233B, 15 fathoms, Albany Island, Cape York, and Arafura Sea. Recorded from Australia and Japan.

ANOMURA (Henderson, Zool. pt. 69).

Pagurus euopsis, Dana. Two specimens; obtained at no other locality by the Challenger. Recorded from Navigator Islands and Balabac Passage.

Petrolisthes unilobatus, n.sp. Four specimens; obtained at no other locality.

Galathea aculeata, Haswell. One specimen; obtained also at Station 208, 18 fathoms. Recorded from Australia.

Munida tuberculata, n.sp. One specimen (240 fathoms); obtained also at Station 173, 315 fathoms.

BRACHYURA (Miers, Zool. pt. 49).

Menæthius monoceros (Latreille), var. *angusta*, Dana. Three specimens; obtained also at Station 186, 8 fathoms. Recorded from Fiji and Samoan Islands.

Lambrus (*Parthenolambrus*) *calappoides* (Adams and White). One specimen; obtained at no other locality by the Challenger.

Etisus lævimanus, Randall. Two specimens; obtained also at Sandwich Islands.

Pilumnus longicornis, Hilgendorf, var. One specimen; obtained at no other locality by the Challenger.

Trapezia cymodoce (Herbst) (?). Three specimens; obtained also at Philippines, 10 fathoms.

TONGATABU.

- Xiphonectes longispinosus* (Dana). Two specimens; obtained at no other locality by the Challenger.
- Thalamonxys danae*, var. *gracilipes*, M.-Edwards. Three specimens; obtained at no other locality by the Challenger.
- Thalamita sima*, M.-Edwards, var. *granulata*, nov. The species obtained also at Station 186 and Port Jackson.
- „ *admets* (Herbst). Two specimens; obtained also at Fiji.
- „ *serlobata*, n.sp. Two specimens; obtained at no other locality.
- „ *pygmaea* (Herbst). One specimen (on the reefs); obtained also at Ternate and Philippines.
- „ *stimpsoni*, M.-Edwards. Two specimens (young); obtained also at Philippines, 10 fathoms.
- Calappa hepatica* (Linné). One specimen; obtained also at Amboina and Sandwich Islands.
- Randallia granulata*, n.sp. One specimen (240 fathoms); obtained also at Station 173, 315 fathoms.

LAMELLIBRANCHIATA¹ (Smith, Zool. pt. 35).

- Corbula modesta*, Hinds. Obtained also at Amboina, 15 to 20 fathoms. Recorded from Philippines, Malacca, and West Africa.
- Psammobia pulcherrima*, Deshayes. One specimen; obtained at no other locality.
- „ *castrensis* (Spengler). One dead specimen; obtained at no other locality by the Challenger. Recorded from Philippines, Hainan, Japan, and Torres Strait.
- Tellina* (*Tellinella*) *verrucosa*, Hanley. Obtained at no other locality by the Challenger. Recorded from Philippines.
- Venus* (*Antigona*) *puerpera*, Linné, var. Obtained at no other locality by the Challenger.
- Circe amica*, n.sp. Obtained at no other locality.
- Cardium* (*Fragum*) *fornicatum*, Sowerby. Obtained at no other locality by the Challenger. Recorded from Borneo.
- Chama brassica*, Reeve. Obtained at no other locality by the Challenger. Recorded from Philippines.
- Lucina* (*Colakia*) *interrupta* (Lamarck). Obtained at no other locality by the Challenger. Recorded from Torres Strait and Louisiade Archipelago.
- Lima multicostata*, Sowerby. Obtained also at Station 56 and Port Jackson.
- Pecten amicus*, n.sp. Single valve; obtained at no other locality.

¹ Several specimens of *Tridacna gigas*, Linné, were obtained from the reefs at Tongatabu.

GASTEROPODA (Watson, Zool. pt. 42).

TONGATABU.

Trochus (*Monilea*) *belcheri*, Philippi. Obtained at no other locality by the Challenger.

Turbo (*Senectus*) *chrysostomus*, Linné. Obtained also at Fiji and Torres Strait. Recorded from Indian and Pacific Oceans.

Murex (*Phyllonotus*) *zelandicus*, Quoy and Gaimard. Obtained also at Stations 167A and 171.

Nassa (*Niotha*) *stigmatica*, Adams. One fragmentary specimen; obtained also at Fiji, 12 fathoms. Recorded from Japan, Philippines, and Andaman Islands.

„ (*Alectryon*) *monile* (Kiener). Obtained at no other locality by the Challenger. Recorded from New Guinea and Philippines.

Phos nodicostatus, Adams. Obtained at no other locality by the Challenger. Recorded from Philippines.

Oliva (*Galeola*) *picta*, Reeve. Obtained also at Arrou Islands and Amboina. Recorded from Philippines and Seychelles.

„ sp. (?).

Columbella (*Conidea*) *flava* (Bruguière). Obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.

Mitra (*Cancilla*) *interlirata*, Reeve. Obtained also at Station 185, Fiji, and Arrou Islands, 12 to 155 fathoms. Recorded from Indian and Pacific Oceans.

Pleurotoma (*Drillia*) *climacota*, n.sp. Obtained at no other locality.

Terebra sp. (?).

Triton (*Gutturium*) *elongatus*, Reeve. Obtained at no other locality by the Challenger. Recorded from Philippines.

Ranella (*Argobuccinum*) *pusilla*, Broderip. Obtained also at Fiji and Torres Strait, 3 to 12 fathoms. Recorded from Indian and Pacific Oceans.

Strombus (*Canarium*) *gibberulus*, Linné. Obtained also at Fiji, 12 fathoms. Recorded from Indian and Pacific Oceans.

Terebellum punctatum, Chemnitz. Obtained also at Station 208, 18 fathoms. Recorded from Indian and Pacific Oceans.

Cypræa lynx, Linné. Obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.

„ *vitellus*, Linné. Obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.

TONGA (ADU).

Natica (Mamma) aurantia, Lamarek. Obtained at no other locality by the Challenger. Recorded from Australia and Red Sea. Fossil—shores of Red Sea.

Amalthea australis, Lamarek. Obtained at no other locality by the Challenger. Recorded from Australia and Philippines.

Cæcum sepimentum, var. *arcuata*, de Folin. One specimen; obtained also at Tahiti, 20 fathoms. The species obtained also at Sandwich Islands, 40 fathoms. Recorded from Mauritius.

„ *exile*, n.sp. One specimen; obtained at no other locality.

„ , two other species undetermined.

Eulima sp. (?).

Mucronalia xanthias, n.sp. Obtained also at Stations 186 and 212, 8 to 20 fathoms.

Cerithium (Vertagus) asperum (Linné). Obtained also at Fiji. Recorded from Indian and Pacific Oceans. Fossil—shores of Red Sea.

„ („), n.sp. (?).

Bittium perparvulum, n.sp. Obtained also at Station 186, Torres Strait, and Sandwich Islands, 7 to 40 fathoms.

Rissoa sp. (?).

„ (?) sp.

Scaliola bella, Adams. Obtained also at Stations 185, 186, 187, Torres Strait, and Sandwich Islands, 3 to 155 fathoms. Recorded from Japan.

Actæon flammeus (Gmelin). Obtained also at Station 188 and Fiji, 28 and 12 fathoms. Recorded from Indian and Pacific Oceans.

NUDIBRANCHIATA (Bergh, Zool. pt. 26).

Platydoris eurychlams, Bergh. One specimen; obtained also at Philippines, 10 fathoms. Recorded from Philippines.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Octopus tonganus, n.sp. Three specimens; obtained at no other locality.

POLYZOA (Buck, Zool. pts. 30 and 50).

Membranipora albida, Hincks (?). Obtained also at Station 75.

Petopora apiculata, n.sp. Obtained at no other locality.

„ *producta*, n.sp. Obtained also at Philippines, 10 fathoms.

Mucronella quadrata, n.sp. Obtained at no other locality.

Idmonœa radians (Lamarek). Obtained also at Sandwich Islands, 20 to 40 fathoms. Recorded from Australian seas, New Zealand, &c.

TUNICATA (Herdman, Zool. pt. 38).

TONGATABU.

Leptoclinum tonga, n.sp. One specimen; obtained at no other locality.

FISHES (Günther, Zool. pt. 6).

Zygæna malleus, Risso. Obtained also at Sandwich Islands.*Trygon kuhli*, M. and H. Obtained at no other locality by the Challenger.*Serranus dispar*, Playfair. Obtained at no other locality by the Challenger.*Mesoprion fulviflamma*, Forsk. Obtained also at Fiji.*Cæzio tile*, C.V. Obtained at no other locality by the Challenger.*Gerres oyena*, Forsk. Obtained also at Fiji.*Holocentrum spiniferum*, Forsk. Obtained at no other locality by the Challenger.*Mugil kelaarti*, Günther. Obtained at no other locality by the Challenger.„ *tongæ*, n.sp. Obtained at no other locality.*Ophichthys maculosus*, Cuvier. Obtained at no other locality by the Challenger.

Excluding Protozoa, over 150 specimens of invertebrates and fishes were obtained at this place, belonging to about 120 species, of which 32 are new to science, including representatives of 2 new genera; 22 of the new species and 1 new genus were not obtained elsewhere. From the deeper water (240 fathoms) 6 species were obtained, of which 5 are new, including representative of 1 new genus; 2 of the new species and the new genus were not obtained elsewhere. One of the new species was taken also only in the shallower water (18 fathoms).

Willemoes-Suhm writes: "The sandy bottom in 18 fathoms was evidently covered by Algæ, among which were Corals, Crustacea, and shells. A little green *Stenorhynchus* was specially adapted for life among the Algæ; the *Lupea* had brighter colours, and *Alpheus*, a compressed little Astacid, made a cracking noise by knocking one finger of its chela upon the other. From 240 fathoms a Hyperid was obtained having very remarkable appendages to the pereion, enabling it to close up exactly like a ball."

Moseley writes: "From 18 fathoms we brought up numerous Algæ, *Halimeda caulerpa*, &c., one specimen of *Acetabularia*, great abundance of a green confervoid-looking Alga, one melanosperm *Pavonaria* (?), one red Alga, and abundance of *Halophila* in fruit (that on the reefs in shallow water was not, I think, in fruit)."

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed during the examination of the deposit from 18 fathoms (Station 172); the pelagic species, which make up about 6 per cent. of the carbonate of lime present in the deposit, are marked thus x:—

ORGANISMS FROM
THE DEPOSIT.*Nubecularia divaricata*, Brady.„ *inflata*, Brady.„ *lucifuga*, Defrance.

(SUMMARY OF RESULTS CHALL. EXP.—1893.)

. *Biloculina ringens* (Lamarck), var. *denticulata*, Brady.*Spiroloculina grata*, Terquem.*Miliolina alveoliniformis*, Brady.

TONGATABU.

Miliolina ferussacii (d'Orbigny).
 „ *linnaeana* (d'Orbigny).
 „ *oblonga* (Montagu).
 „ *parkeri*, Brady.
 „ *reticulata* (d'Orbigny).
 „ *seminulum* (Linné).
 „ *tricarinata* (d'Orbigny).
 „ *trigonula* (Lamarek).
Articulina sagra, d'Orbigny.
Vertebralina insignis, Brady.
Hauerina ornatissima (Karrer).
Peneroplis pertusus (Forskål).
Orbitolites complanata (Lamarek).
 „ „ var. *laciniata*, Brady.
 „ *duplex*, Carpenter.
 „ *marginalis* (Lamarek).
Alveolina boscii (Defrance).
Sagenella frondescentis, Brady.
Reophax scorpionus, Montfort.
Planispirina cenomana (d'Orbigny).
Trochammina ringens, Brady.
Textularia agglutinans, d'Orbigny, var. *porrecta*,
 Brady.
 „ *concava* (Karrer).
 „ *conica*, d'Orbigny.
 „ *gramen*, d'Orbigny.
 „ *rugosa* (Reuss).
 „ *siphonifera*, Brady.
Verneuilina spinulosa, Reuss.
Clavulina angularis, d'Orbigny.
Bolivina limbata, Brady.

Sagrina raphanus, Parker and Jones.
 × *Globigerina bulloides*, d'Orbigny.
 × „ *conglobata*, Brady.
Spirillina inaequalis, Brady.
 „ *vivipara*, Ehrenberg.
Cymbalopora poeyi (d'Orbigny).
Discorbina orbicularis (Terquem).
 „ *pileolus* (d'Orbigny).
 „ *rosea* (d'Orbigny).
 „ *tabernacularis*, Brady.
 „ *valvulata* (d'Orbigny).
Truncatulina akneriana (d'Orbigny).
 „ *echinata*, Brady.
 „ *lobatula* (Walker and Jacob).
 „ *rostrata*, Brady.
 „ *variabilis*, d'Orbigny.
Carpenteria utricularis, Carter.
 × *Pulvinulina canariensis* (d'Orbigny).
 „ *lateralis* (Terquem).
Calcarina hispida, Brady.
Gypsina inhærens (Schultze).
 „ *vesicularis* (Parker and Jones).
Polytrema miniatum (Linné).
Nonionina turgida (Williamson).
Polystomella craticulata (Fichtel and Moll).
 „ *crispa* (Linné).
Amphistegina lessonii, d'Orbigny.
Operculina complanata (Defrance).
 „ „ var. *granulosa*, Leymerie.
Heterostegina depressa, d'Orbigny.

The following species were observed in the deposit from 240 fathoms (Station 172A), where the pelagic species, marked thus ×, make up about 30 per cent. of the carbonate of lime present:—

Biloculina depressa, d'Orbigny.
 „ *ringens* (Lamarek).
 „ „ var. *striolata*, Brady.
Spiroloculina acutimargo, Brady.
 „ *conversicula*, Brady.
 „ *crenata*, Karrer.
 „ *curvata*, d'Orbigny.
 „ *grata*, Terquem.
Miliolina agglutinans (d'Orbigny).
 „ *orbicularis* (Bornemann).
 „ *linnaeana* (d'Orbigny).
 „ *oblonga* (Montagu).
 „ *parkeri*, Brady.
 „ *seminulum* (Linné).

Miliolina tricarinata (d'Orbigny).
 „ *undosa* (Karrer).
 „ sp. (?).
Articulina conico-articulata (Batsch).
 „ *lineata*, Brady.
Vertebralina insignis, Brady.
 „ *striata*, d'Orbigny.
Ophthalmidium inconstans, Brady.
Hauerina ornatissima (Karrer).
Planispirina sigmoidea, Brady.
Cornuspira involvens, Reuss.
Peneroplis pertusus (Forskål).
Orbitolites complanata, Lamarek.
 „ *marginalis* (Lamarek).

- Alveolina boscii*, Defrance.
Psammosphæra fusca, Schulze.
Reophax nodulosa, Brady.
 „ *scorpiurus*, Montfort.
Haplophragmium agglutinans (d'Orbigny).
 „ *canariensis* (d'Orbigny).
 „ *pseudospirale* (Williamson).
Placopsilina cenomana, d'Orbigny.
Webbina clavata, Jones and Parker.
Textularia folium, Parker and Jones.
 „ *quadrilatera* (Schwager).
 „ *sagittula*, Defrance, var. *fistulosa*, Brady.
 „ *trochus*, d'Orbigny.
 „ sp. (?).
Verneuilina spinulosa, Reuss.
Tritaxia indiscreta, Brady.
 „ *lepida*, Brady.
 „ *tricarinata*, Reuss.
Pavonina flabelliformis, d'Orbigny.
Spiroplecta annectens (Parker and Jones).
Bulimina aculeata, d'Orbigny.
 „ *williamsoniana*, Brady.
 „ sp. (?).
Bolivina decussata, Brady.
 „ *limbata*, Brady.
 „ *lobata*, Brady, var. *strigosa*, Brady.
 „ *textilarioides*, Reuss.
Cassidulina lævigata, d'Orbigny.
Ehrenbergina (?) sp.
Chilostomella ovoidea, Reuss.
Lagena castrensis, Schwager.
 „ *globosa* (Montagu).
 „ *quadrata* (Williamson).
 „ *striata* (d'Orbigny).
Nodosaria communis, d'Orbigny.
 „ *proxima*, Silvestri.
 „ *pyrula*, d'Orbigny.
 „ *raphanus* (Linné).
Cristellaria calcar (Linné).
 „ *crepidula* (Fichtel and Moll).
 „ *gibba*, d'Orbigny.
 „ *nitida*, d'Orbigny.
 „ *orbicularis* (d'Orbigny).
 „ sp. (?).
Polymorphina gibba, d'Orbigny.
 „ *oblonga*, d'Orbigny.
Uvigerina aculeata, d'Orbigny.
 „ *canariensis*, d'Orbigny.
 „ *porrecta*, Brady.
Sagrina columellaris, Brady.
Sagrina raphanus, Parker and Jones.
 × *Globigerina æquilateralis*, Brady.
 × „ *conglobata*, Brady.
 × „ *rubra*, d'Orbigny.
 × „ *sacculifera*, Brady.
 × *Orbulina universa*, d'Orbigny.
Pullenia quinqueloba, Reuss.
 × *Sphæroidina dehiscens*, Parker and Jones.
 × *Candeina nitida*, d'Orbigny.
Spirillina decorata, Brady.
 „ *inequalis*, Brady.
Patellina corrugata, Williamson.
 × *Cymbalopora* (*Tretomphalus*) *bulloides* (d'Orbigny).
 „ *tabellæformis*, Brady.
Discorbina orbicularis (Terquem).
 „ *rugosa* (d'Orbigny).
Planorbulina acervalis, Brady.
 „ *larvata*, Parker and Jones.
Truncatulina echinata, Brady.
 „ *lobatula* (Walker and Jacob).
 „ *reticulata* (Czjzek).
 „ *tenera*, Brady.
 „ *variabilis*, d'Orbigny.
Anomalina polymorpha, Costa.
Carpenteria monticularis, Carter.
 „ *proteiformis*, Goës.
Pulvinulina concentrica, Parker and Jones.
 × „ *crassa* (d'Orbigny).
 „ *elegans* (d'Orbigny).
 „ *karsteni* (Reuss).
 × „ *menardii* (d'Orbigny).
 „ *repanda* (Fichtel and Moll).
 × „ *tumida*, Brady.
 „ (?) sp.
Calcarina hispida, Brady.
Tinoporus baculatus (Montfort ?), Carpenter.
Gypsina inhærens (Schultze).
 „ *vesicularis* (Parker and Jones).
Polytrema miniaceum (Linné).
Nonionina asterizans (Fichtel and Moll).
Polystomella arctica (Parker and Jones) (?).
 „ *crispa* (Linné).
 „ *macella* (Fichtel and Moll).
Amphistegina lessonii, d'Orbigny.
Operculina complanata, Defrance, var. *granulosa*,
 Leymerie.
Heterostegina depressa, d'Orbigny.
 „ sp. (?).
Nummulites cumingii, Carpenter.
Cyclocypeus guembelianus, Brady.

TONGATABU.

During the passage from Tongatabu to Matuku several blackish birds were reported to have been seen, but otherwise no birds were observed from the ship. Large numbers of flying fish were observed : a small species which appeared to take very long flights.

STATIONS 173
AND 173A.

Stations 173 and 173A (Soundings 298 and 299), off Matuku (see Chart 29).

July 24, 1874.

Temperature of air at noon, $71^{\circ}3$; mean for the day, $70^{\circ}2$.

Temperature of water at surface, $76^{\circ}0$.

Density at 60° F. at surface, 1.02642.

At 6.30 A.M. observed Matuku Island. At 8 A.M. got up steam. At 9.20 A.M. proceeded under steam. At 10.30 A.M. stopped off entrance to Matuku Harbour ; landed officers and naturalists. At 11 A.M. sounded in 315 fathoms, deposit Coral Mud (Station 173). Put dredge over. At noon hove up dredge, and sent it down again at 12.15 P.M. At 1 P.M. sounded in 310 fathoms, deposit Coral Mud (Station 173A). At 2 P.M. dredge came up fouled. Put over trawl, which came up at 4 P.M. with numerous specimens. Proceeded towards the entrance through the reef, and at 4.30 P.M. stopped off entrance to pick up officers and naturalists. At 5 P.M. made sail, and proceeded towards Kandavu.

ANIMALS FROM
DREDGE AND
TRAWL.

The following species are recorded in the Zoological Reports from the dredge and trawl at these Stations :—

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Neosiphonia superstes, n.g., n.sp. One specimen ; obtained at no other locality.

Only species of the genus.

Pleroma turbinatum, n.g., n.sp. One specimen ; obtained at no other locality.

Only species of the genus.

ACTINIARIA (Hertwig, Zool. pt. 73).

Adamsia (?) sp. (Firmly fixed on a Gasteropod shell).

HYDROIDA (Allman, Zool. pt. 70).

Cryptolaria geniculata, n.sp. Obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiozona insularia, n.sp. Obtained at no other locality.

Ophiomastus texturatus, n.sp. [See *Bull. Mus. Comp. Zool.*, vol. x. pp. 247-248, 1883].

SOUNDINGS AND STATIONS

in the vicinity of

MATUKU ISLAND

Obs Spot + Lat. 19°9'38"S. Long. 179°43'23"E.

For explanation of abbreviations see Appendix 1





- Ophiopyren brevispinus*, n.g., n.sp. Obtained at no other locality.
Ophiomyxa australis, Lütken. For distribution see Station 109.

STATIONS 173
AND 173A.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Asthenosoma coriaceum*, n.sp. Obtained also at Station 172.
Cottaldia forbesiana, n.sp. One specimen ; obtained at no other locality.
Peronella decagonalis (Lesson). For distribution see Station 172.

MACRURA (Spence Bate, Zool. pt. 52).

- Polycheles baccata*, n.sp. Six specimens ; obtained at no other locality.
Pentacheles euthrix, n.g., n.sp. (*Willemæsia euthrix*, Willemoes-Suhm, MS.).
Several specimens ; obtained also at Station 170.
Penæus rectacutus, n.sp. Five specimens ; obtained also at Station 209, 95 fathoms.
Recorded subsequently from Indian Ocean ("Investigator").
,, *serratus*, n.sp. One specimen ; obtained also at Station 184, 1400 fathoms.
Aristeus rostridentatus, n.sp. Three specimens ; obtained at no other locality.
Recorded subsequently from Indian Ocean ("Investigator").
Benthesicymus brasiliensis, n.g., n.sp. One specimen ; obtained also at Stations 168,
181, 184, 285, and 323.
Sergestes atlanticus, M.-Edwards. One specimen ; for distribution see Station 159.
Glyphocrangon regalis, n.sp. One specimen ; obtained also at Stations 171 and 194.
Plesionika semilævis, n.g., n.sp. Seven specimens ; obtained also at Stations 164B,
170, and 200.
Pasiphaea cristata, n.sp. One specimen ; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

- Munida normani*, n.sp. Eleven specimens ; obtained at no other locality.
,, *granulata*, n.sp. Nine specimens ; obtained at no other locality.
,, *militaris*, n.sp. Five specimens ; obtained also at Stations 192, 200, 210,
and Amboina, 100 to 375 fathoms.
,, *tuberculata*, n.sp. Two specimens ; obtained also at Station 172A.
Elasmonotus miersii, n.sp. One specimen ; obtained at no other locality.
,, *debilis*, n.sp. One specimen ; obtained also at Station 210,
375 fathoms.

BRACHYURA (Miers, Zool. pt. 49).

- Pilumnoplax byssicola*, n.sp. One specimen ; obtained at no other locality.
Mursia curtispina, n.sp. One specimen ; obtained at no other locality.
Randallia granulata, n.sp. Four specimens ; obtained also at Station 172A.
Ethusa orientalis, n.sp. Two specimens ; obtained at no other locality.

STATION 173
AND 173A.

GASTEROPODA (Watson, Zool. pt. 42).

- Turbo (Calcar) henicus*, n.sp. Obtained at no other locality.
Fusus (Sipho) libratus, n.sp. Obtained at no other locality.
Ranella fijiensis, n.sp. Obtained also at Station 204A, 100 to 115 fathoms.
Xenophora n.sp. (?).
Cerithium matukense, n.sp. Obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

- Nautilus pompilius*, Linné. One living specimen; obtained at no other locality by the Challenger.

FISHES (Günther, Zool. pt. 57).

- Scorpena percoides*, Solander. One specimen; obtained also at Stations 163A and 166.
Setarches fijiensis, n.sp. One specimen; obtained at no other locality.
Chaunax pictus, Lowe. One specimen; obtained at no other locality by the Challenger. Recorded from Japan, Madeira, and New England coast.
Neobythites macrops, n.sp. One specimen; obtained also at Station 210, 375 fathoms. Recorded subsequently from Indian Ocean ("Investigator").
Macrurus longibarbis, n.sp. One specimen; obtained at no other locality.
 „ *microlepis*, n.sp. One specimen; obtained at no other locality.
Chlorophthalmus productus, n.sp. Two specimens; obtained at no other locality.
Scopelus dumerilii, Bleeker. One specimen; obtained at no other locality by the Challenger.
Congromuræna guttulata, n.sp. One specimen; obtained at no other locality.

In addition to the foregoing, *Ventriculites* is mentioned in the Station-book.

Excluding Protozoa, about 100 specimens of invertebrates and fishes were obtained at these Stations, belonging to 48 species, of which 38 are new to science, including representatives of 6 new genera; 23 of the new species and 2 new genera were not obtained elsewhere.

Willemoes-Suhm mentions several male specimens of *Willemæsia* [= *Pentacheles*] *euthrix*, a loricated spiny shrimp (previously taken off Pernambuco and off the Crozets), *Colappa* (never taken in such deep water), and *Nautilus*.

Mostley writes: "A living specimen of *Nautilus pompilius* came up, which when placed in water floated with a small portion of the shell out of the water; it was probably suffering from distention after being brought up from the depths. It moved backwards

by jerks, the propelling spouts from the siphon being directed somewhat downwards, so that the shell was a little rotated and raised to a slightly greater extent out of the water at each jerk. Occasionally when the animal was excited it made a sort of dash, the water being spouted out with great violence, so as to cause a strong eddy on the surface. On each side of the base of the opercular-like head-fold, the fold of the mantle closing the gill-cavity was to be seen rising and falling with a pulsating motion, which was very conspicuous. The tentacular-like arms were held extended radially from the head, like the tentacles of an Actinian somewhat, but each pair in a constant and different direction. One pair was held directly downwards; those on each side of the eye were held projecting obliquely from it forwards and backwards, as if to protect that organ. The smallness and fineness of the arms were very striking, as also the very definite direction of each pair."

STATIONS 173
AND 173A.

The specimen of *Chaunax* was of a beautiful rose colour, and the tentacular-like appendages along the body appeared to mimic closely the red Algæ. All the scales had been rubbed off the Scopelid when hauling in the trawl.

Stations 174 to 174D (Soundings 300 to 304), off Kandavu Island (see Chart 30 and Diagram 12).

STATIONS 174
TO 174D.

August 3, 1874.

Temperature of air at noon, $78^{\circ}3$; mean for the day, $74^{\circ}8$.

Temperature of water :—

Surface, ...	78.0	350 fathoms, ...	44.2
50 fathoms, ...	76.8	400 "	42.3
100 "	71.0	450 "	40.9
150 "	65.2	500 "	39.8
200 "	59.5	600 "	39.0
250 "	53.7	Bottom (610 fathoms), ...	39.0
300 "	47.8		

At daylight observed Kandavu Island on the starboard beam. At 7.45 A.M. stopped off the entrance to Ngaloa Harbour, and despatched surveying boats. Soundings were taken:—in 140 fathoms, deposit Coral Mud, containing 86.41 per cent. of carbonate of lime (Station 174); in 160 fathoms, deposit Coral Mud (Station 174A); in 255 fathoms, deposit Coral Mud, containing 86.31 per cent. of carbonate of lime (Station 174B); in 610 fathoms, deposit Globigerina Ooze, containing 79.65 per cent. of carbonate of lime (Station 174C); and in 210 fathoms, deposit Coral Mud, containing 86.97 per cent. of carbonate of lime (Station 174D). At the last three Stations trawlings and dredgings were taken, the trawl being used in 255 and 610 fathoms, and the dredge in 210 fathoms.

STATIONS 174
TO 174D.

At Station 174C, 610 fathoms, serial temperatures were taken down to the bottom. At 4.30 P.M. proceeded into Ngaloa Harbour, anchoring at 5.45 P.M. in $11\frac{1}{2}$ fathoms.

ANIMALS FROM
TRAWL AND
DREDGE.

The following species are recorded in the Zoological Reports from the trawl and dredge at these Stations, the depth being indicated:—

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Chondrocladia clavata, n.sp. Two specimens (610 fathoms); obtained at no other locality. [Recorded in error from 140 fathoms].

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Tageria pulchra, n.g., n.sp. One specimen (610 fathoms); obtained at no other locality. Only species of the genus.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Ceratoisis grandiflora, Studer. Several specimens (255, 610, and 210 fathoms); obtained at no other locality. Recorded from Fiji.

Calyptrophora japonica, Gray. One specimen (610 fathoms); obtained at no other locality by the Challenger. Recorded from Japan and Bourbon.

Stenella gigantea, n.sp. One specimen (210 to 610 fathoms); obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Acanthocyathus dentatus, n.sp. One specimen (210 fathoms); obtained at no other locality.

CRINOIDEA (Carpenter, Zool. pt. 60).

Atelecrinus vyrillii, n.sp. One specimen (610 fathoms); obtained at no other locality.

Antedon incisa, n.sp. Two specimens (255, 610, or 210 fathoms); obtained also at Station 170A.

„ *tuberculata*, n.sp. One specimen (255, 610, or 210 fathoms); obtained at no other locality.

„ *similis*, n.sp. One specimen (255, 610, or 210 fathoms); obtained at no other locality.

„ *occulta*, n.sp. Three specimens (255, 610, or 210 fathoms); obtained at no other locality.

„ *inaequalis*, n.sp. Five specimens (255, 610, or 210 fathoms); obtained also at Stations 170A and 175 (?).

- Actinometra typica* (Lovén). One specimen (255, 610, or 210 fathoms); obtained at no other locality by the Challenger. Recorded from Malacca, Jobie, Zebu, Fiji, and Kingsmill Islands. STATIONS 174 TO 174D.
- „ *stelligera*, n.sp. Seven specimens (255, 610, or 210 fathoms—most probably 210 or 255 fathoms); obtained at no other locality by the Challenger. Recorded from Tonga, Fiji, Samoa, and Atagar.
- „ *parvicirra* (Müller). One specimen (255, 610, or 210 fathoms); for distribution, see the Cape.

OPHIUROIDEA (Lyman, Zool. pt. 14).

- Ophiophyllum petilum*, n.g., n.sp. (210 to 610 fathoms); obtained also at Station 171. Only species of the genus.
- Ophiactis nama*, n.sp. (210 to 610 fathoms); obtained also at Station 171.
- Amphiura bellis*, n.sp. (var. ?). (210 to 610 fathoms); obtained also at Stations 232 and 236, 345 to 775 fathoms.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Micropygæ tuberculata*, n.g., n.sp. (255, 610, or 210 fathoms); obtained also at Stations 204, 219, and Philippines, 100 to 150 fathoms. Only species of the genus.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

- Synapta challengerî*, n.sp. Two specimens (210 fathoms); obtained at no other locality. [Recorded in error from 140 fathoms].

ANNELIDA (McIntosh, Zool. pt. 34).

- Praxilla köllikeri*, n.sp. One specimen (210 fathoms); obtained at no other locality. [Recorded in error from 140 fathoms].
- Terebellides ehlersi*, n.sp. One specimen (210 fathoms); obtained at no other locality.

MYZOSTOMIDA (Graff, Zool. pts. 27 and 61).

- Myzostoma labiatum*, n.sp. (On *Antedon inæqualis* ?).
- „ *echinus*, n.sp. (On *Antedon incisa* or *A. inæqualis*).
- „ *elongatum*, Graff. (On *Antedon occulta*, *A. similis*, or *A. tuberculata*).
- „ *fissum*, n.sp. (On *Antedon inæqualis*, *A. occulta*, *A. similis*, or *A. tuberculata*).

STATIONS 174
TO 174D.

Myzostoma tenuispinum, n.sp. (On *Antedon inaequalis*).

„ *willemoesii*, n.sp. (On *Antedon inaequalis*).

OSTRACODA (Brady, Zool. pt. 3).

Krithe producta, n.sp. (610 fathoms); widely distributed (see Station 70).

Xiphichilus (?) *arcuatus*, n.sp. (610 fathoms); obtained at no other locality.

ISOPODA (Beddard, Zool. pt. 48).

Arcturus spinifrons, n.sp. Two specimens (610 fathoms); obtained at no other locality.

SCHIZOPODA (Sars, Zool. pt. 37).

Gnathophausia elegans, n.g., n.sp. One specimen (610 fathoms); obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Pentacheles gracilis, n.g., n.sp. One specimen (610 fathoms); obtained at no other locality.

Stercomastis auriculata, n.g., n.sp. One specimen (610 fathoms); obtained at no other locality.

Benthesicymus altus, n.g., n.sp. One specimen (610 fathoms); for distribution see Station 133.

Oplophorus longirostris, n.sp. One specimen (610 fathoms); obtained at no other locality.

Nematocarcinus gracilis, n.sp. Two specimens (610 fathoms); obtained also at Station 171.

„ *paucidentatus*, n.sp. One specimen (610 fathoms); obtained at no other locality.

„ *tenuirostris*, n.sp. Two specimens (610 fathoms); obtained also at Station 214, 500 fathoms.

ANOMURA (Henderson, Zool. pt. 69).

Lyreidus tridentatus, De Haan. One specimen (210 fathoms); obtained also at Port Jackson.

Munida spinicordata, n.sp. One specimen (210 fathoms); obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Gaza dardala, n.g., n.sp. One specimen (610 fathoms); obtained at no other locality. Only species of the genus.

Clathurella (*Daphnella*) *compsa*, n.sp. (210 fathoms); obtained at no other locality. STATIONS 174 TO 174D.

In addition to the foregoing, the following are recorded in the Station-book:—Pennatulids and *Lophohelia* from 255 fathoms; two specimens of *Willemoesia* [= *Pentacheles*] *euthrix* and small specimen of *Maurolicus* from 610 fathoms; small urchin and *Ranina* from 210 fathoms.

Excluding Protozoa, about 100 specimens of invertebrates and fishes were obtained at these Stations, belonging to about 50 species, of which 37 are new to science, including representatives of 8 new genera; 22 of the new species and 2 new genera were not obtained elsewhere. From the deeper water (610 fathoms) about 40 specimens were obtained, belonging to 23 species, of which 20 are new to science, including representatives of 7 new genera; 13 of the new species and 2 new genera were not obtained elsewhere.

Willemoes-Suhm mentions a small specimen of *Gnathophausia zoëa*, two specimens of *Willemoesia euthrix* (a species which seems to vary very much as regards details of the carapace), a very peculiar Peneid, not got before, the rami of which are flat and covered with hairs on both sides, *Ranina*, *Galathea*, *Synapta* with a few very small anchors, Terebellid, and *Clymene*.

The following species of Pteropoda and Foraminifera were observed in the deposits from these Stations (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.):— ORGANISMS FROM THE DEPOSITS.

PTEROPODA (Pelseneer, Zool. pt. 65).—From 140 fathoms (Station 174).

Limacina inflata (d'Orbigny).

FORAMINIFERA (Brady, Zool. pt. 22).—From 610 fathoms (Station 174c); the pelagic species, which make up about 50 per cent. of the carbonate of lime present in the deposit, are marked thus ×.

Biloculina depressa, d'Orbigny.
 „ *irregularis*, d'Orbigny.
Spiroloculina acutimargo, Brady.
 „ *crenata*, Karrer.
 „ *excavata*, d'Orbigny.
Miliolina circularis (Bornemann).
 „ *oblonga* (Montagu).
 „ *tricarinata* (d'Orbigny).
Articulina conico-articulata (Batsch).
 „ *lineata*, Brady.
Ophthalmidium inconstans, Brady.
Planispirina sigmoidea, Brady.
 „ sp (?).

Cornuspira involvens, Reuss.
Orbitolites complanata, Lamarck.
Alveolina bosci, DeFrance.
Hyperammia elongata, Brady.
 „ *ramosa*, Brady.
Haplophragmium anceps, Brady.
 „ *emaciatum*, Brady.
 „ *globigeriniforme* (Parker and Jones).
 „ *latidorsatum* (Bornemann).
Ammodiscus gordialis (Jones and Parker).
 „ *incertus* (d'Orbigny).
Trochammina pauciloculata, Brady.

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80 174D.

- Trochammina ringens*, Brady.
 „ *trullissata*, Brady.
Webbina clavata, Jones and Parker.
Textularia agglutinans, d'Orbigny.
Vermetulina spinulosa, Reuss.
Gastropoda pupoides, d'Orbigny.
 „ *siphonella*, Reuss.
Bulimina convoluta, Williamson.
Bolirina robusta, Brady.
 „ *tortuosa*, Brady (?).
Cassidulina subglobosa, Brady.
Lagena acuta (Reuss).
 „ *apiculata*, Reuss.
 „ *marginata* (Walker and Boys), var.
 semimarginata, Reuss.
 „ *orbignyana* (Seguenza).
Nodosaria communis, d'Orbigny.
Cristellaria cultrata (Montfort).
Uvigerina asperula, Czjzek.
 „ „ var. *ampullacea*, Brady.
 × *Globigerina æquilateralis*, Brady.
 × „ *conglobata*, Brady.
 × „ *dubia*, Egger.
 × *Globigerina inflata*, d'Orbigny.
 × „ *succulifera*, Brady.
 × *Orbulina universa*, d'Orbigny.
Pullenia quinqueloba, Reuss.
Sphaeroidina bulloides, d'Orbigny.
 × „ *dehiscens*, Parker and Jones.
 × *Candeina nitida*, d'Orbigny.
Cymbatopora poeyi (d'Orbigny).
Discorbina orbicularis (Ferquem).
Truncatulina dutemplei (d'Orbigny).
 „ *lobatula* (Walker and Jacob).
 „ *ungeriana* (d'Orbigny).
Anomalina grosserugosa (Gümbel).
 × *Pulvinulina crassa* (d'Orbigny).
 × „ *menardii* (d'Orbigny).
 × „ *melchioriana* (d'Orbigny).
 × „ *tumida*, Brady.
Nonionina turgida (Williamson).
 „ *umbilicatula* (Montagu).
Operculina complanata (DeFrance), var.
 granulosa, Leymerie.
Amphistegina lessonii, d'Orbigny.

From 210 fathoms (Station 174D); the pelagic species, which make up about 12 per cent. of the carbonate of lime present in the deposit, are marked thus ×.

- Biloculina bulloides*, d'Orbigny.
 „ *depressa*, d'Orbigny.
 „ *elongata*, d'Orbigny.
 „ *irregularis*, d'Orbigny.
 „ *ringens* (Lamarck).
 „ *tubulosa*, Costa.
Spiraloculina arenaria, Brady.
 „ *convexiuscula*, Brady (?).
 „ *grata*, Terquem.
 „ *tenuis* (Czjzek).
Miliolina seminulum (Linné).
 „ *tricarinata* (d'Orbigny).
 „ *triquetra*, Brady.
 „ sp. (?).
Articulina conico-articulata (Batsch).
 „ *foveata*, Brady.
 „ *ulata*, Reuss.
Haueneria cruciata (Karrer).
Ceratomyra foliacea (Philippi).
 „ *indiana*, Reuss.
Pteropoda portus (Forskål).
Pleuromma rotundata, Brady (?).
Bathysiphon sp. (?).
Hyperammia friabilis, Brady (?).
Marsipella cylindrica, Brady.
Rhizammia algaformis, Brady.
 „ *indivisa*, Brady (?).
 „ (?) sp.
Reophax difflugiformis, Brady.
 „ *fusiformis* (Williamson).
Haplophragmium agglutinans (d'Orbigny).
 „ *calcareum*, Brady.
 „ *latidorsatum* (Bornemann).
 „ sp. (?).
Trochammina squamata, Jones and Parker.
Webbina clavata, Jones and Parker.
Textularia gramen, d'Orbigny.
 „ *sagittula*, DeFrance, var. *fistulosa*, Brady.
 „ *trochus*, d'Orbigny.
Vermetulina spinulosa, Reuss.
 „ *triquetra* (Münster).
 „ *variabilis*, Brady (?).
Tritaxia caperata, Brady.
 „ *indiscreta*, Brady.
Bigenenerina digitata, d'Orbigny.
Claculina communis, d'Orbigny.

Clavulina cylindrica, Hantken.
 „ *parisiensis*, d'Orbigny.
Bulimina aculeata, d'Orbigny.
 „ *affinis*, d'Orbigny.
 „ *ovata*, d'Orbigny.
Bolivina robusta, Brady (?).
 „ *textilarioides*, Reuss.
Cassidulina lavigata, d'Orbigny.
Ehrenbergina serrata, Reuss.
Lagena lævis (Montagu) (?).
 „ *striata* (d'Orbigny).
 „ sp. (?).
Nothosaria communis, d'Orbigny.
 „ *consobrina*, d'Orbigny.
 „ *obliqua* (Linné).
 „ *pyrula*, d'Orbigny.
 „ *raphanus* (Linné).
 „ sp. (?).
Rhabdognathum tricarinarum (d'Orbigny).
Marginulina glabra, d'Orbigny.
Vaginulina legumen (Linné).
Cristellaria calcar (Linné).
 „ *costata* (Fichtel and Moll).
 „ *crassa*, d'Orbigny.
 „ *crepidula* (Fichtel and Moll).
 „ *cultrata* (Montfort).
 „ *echinata* (d'Orbigny).
 „ *gemmata*, Brady.
 „ *gibba*, d'Orbigny.
 „ *italica* (Defrance).
 „ *mamilligera*, Karrer.
 „ *nitida*, d'Orbigny.
 „ *orbicularis* (d'Orbigny) (?).
 „ *papillosa* (Fichtel and Moll).
 „ *saldalliana*, Brady.
 „ *vortex* (Fichtel and Moll).

Cristellaria sp. (?).
Uvigerina asperula, Czjzek.
 „ „ var. *ampullacea*, Brady.
 „ *canariensis*, d'Orbigny.
 „ *pygmæa*, d'Orbigny.
Sagrina striata, Schwager.
Ramulina globulifera, Brady.
 × *Globigerina conglobata*, Brady.
 × „ *rubra*, d'Orbigny.
 × „ *sacculifera*, Brady.
 × *Orbulina universa*, d'Orbigny.
 × *Hastigerina pelagica* (d'Orbigny).
 × *Pullenia obliquiloculata*, Parker and Jones.
 „ *quinqueloba*, Reuss.
 × *Sphæroidina dehiscens*, Parker and Jones.
 × *Cymbalopora (Tretomphalus) bulloides* (d'Orbigny).
 „ *poeyi* (d'Orbigny).
 „ *tabelliformis*, Brady.
Discorbina rosacea, d'Orbigny.
Planorbulina larvata, Parker and Jones.
Truncatulina præcincta (Karrer).
 „ *tenera*, Brady (?).
 „ *wuellerstorfi* (Schwager) (?).
 „ sp. (?).
Anomalina ammonoides (Reuss).
Pulvinulina elegans (d'Orbigny).
 × „ *menardii* (d'Orbigny).
 „ *procera*, Brady.
 × „ *tumida*, Brady.
Rotalia soldanii, d'Orbigny (?).
Calcarina spengleri, Linné.
Tinoporus baculatus (Montfort ?), Carpenter.
Polytrema miniaceum (Linné).
Nonionina umbilicatula (Montagu).
Amphistegina lessonii, d'Orbigny.
Heterostegina depressa, d'Orbigny (?).

STATIONS 174
TO 174D.

Surface Organisms.—August 2 was calm all day, and tow-nets were sent down to 20 fathoms, 40 fathoms, and 100 fathoms. From 20 fathoms many Foraminifera (*Globigerina* and *Orbulina*, nearly all with long spines) were obtained; from 40 fathoms the same, with the addition of one or two specimens of *Pulvinulina menardii*; from 100 fathoms a good many more *Pulvinulinæ* than from 40 fathoms. The *Globigerina*-like body inside the *Orbulina* had sometimes spines attaching it to the inner surface of the *Orbulina* shell, and sometimes not. Sometimes a protoplasmic mass could be seen between the *Globigerina* and the *Orbulina* shell, and sometimes the protoplasmic matter was entirely confined to the *Globigerina* shell. The sarcode of the *Orbulina* was crowded with elongated “yellow cells” resembling those found in Radiolaria. In addition there

ORGANISMS FROM
THE SURFACE.

STATIONS 174
TO 174D

were: *Peridinium*, orbular green Algæ (*Halosphæra* ?), *Pyrocystis*, Acanthometræ and other Radiolarians, Siphonophoræ in all stages with eggs, larvæ of Holothurians, larvæ of Aphroditaceans, *Sagitta*, *Saphirina*, Zoëæ, Pteropods and larvæ, *Appendicularia*, *Salpa*. On August 3 the tow-net was sent down to 20 fathoms, and produced many Oscillatoriaceæ, the spherical green Algæ (*Halosphæra*), *Pyrocystis*, *Globigerina*, *Orbulina*, (no *Pulvinulina* noticed), *Sagitta*, many Crustaceans, and Pteropods. In the stomachs of the *Salpæ* were many minute organisms, both siliceous and calcareous, two forms of Rhabdospheres, one especially abundant, and many forms of Coccospheres.

Two sharks (male and female) were caught, belonging to the same species (*Carcharias lamia*). About one of them were several specimens of *Naucrates ductor*; there were many sharks about at the time, so that there appears to be no truth in the statement that *Naucrates* does not accompany sharks when there is more than one shark present. In the female the ovaria were double, and the oviduct soon dilated into a very large uterus on each side, each of which contained four young sharks about 2 feet in length, all attached by an umbilical cord to a placenta.

AT FIJI

The Challenger Expedition remained in the vicinity of the Fiji Islands from July 24 till August 11, 1874, visiting Matuku, Kandavu, and Ovalau (for description of the Islands see *Narr. Chall. Exp.*, vol. i. pp. 487-509). The following species are recorded in the Zoological Reports as having been obtained in shallow water, on the reefs, or on shore, during the visit:—

ANIMALS FROM
FIJI

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Ceratoisis nuda, n.sp. A few broken specimens (Kandavu reefs—probably from deep water); obtained at no other locality.

Calypterinus allmani, n.g., n.sp. Two specimens (Fiji reefs—almost certainly from deep water); obtained at no other locality. Only species of the genus.

Acamptogorgia alternans, n.g., n.sp. (Kandavu reefs); obtained at no other locality.

Sarcophytum glaucum, Quoy and Gaimard. (Off Kandavu); obtained at no other locality by the Challenger.

„ *trocheliophorum*, Marenzeller, var. *amboinense*, nov. One specimen (Fiji reefs); obtained at no other locality by the Challenger. The species recorded from Indian Ocean.

REEF CORALS (Quelch, Zool. pt. 46).

Stylophora prostrata, Klunzinger. (Fiji reefs); obtained also at Tongatabu.

„ *palmata* (Blainville). (Kandavu and other reefs); obtained also at Ternate. Recorded from Red Sea.

W.

Fiji islands.

For explanation of abbreviations &c. see Appendix 1.



Eng. used by Malbo. 1800



- Seriatopora caliendrum*, Ehrenberg. (Fiji reefs); obtained also at Philippines. Fiji.
Recorded from Red Sea.
- „ *stellata*, n.sp. One specimen (Fiji reefs); obtained at no other locality.
- „ *hystrix*, Dana. Two specimens (Levuka); obtained at no other locality by the Challenger.
- „ *conferta*, n.sp. Two specimens (Kandavu); obtained at no other locality.
- Pocillopora brevicornis*, Lamarck. (Fiji reefs); obtained also at New Hebrides.
- Galaxea explanata*, n.sp. (Levuka); obtained at no other locality.
- „ *fascicularis* (Linnæus). One specimen (Kandavu); obtained at no other locality by the Challenger.
- Mussa fistulosa*, M.-Edwards and Haime. One specimen (Kandavu); obtained at no other locality by the Challenger.
- Cæloria dædalina* (Dana). Two specimens (Kandavu and other reefs); obtained at no other locality by the Challenger.
- „ *esperii*, M.-Edwards and Haime. One specimen (Kandavu); obtained at no other locality by the Challenger.
- „ *stricta*, M.-Edwards and Haime. One specimen (Kandavu); obtained at no other locality by the Challenger.
- Hydnophora microcona* (Lamarck). Several specimens (Kandavu and other reefs); obtained at no other locality by the Challenger.
- Astræa versipora*, Dana. One specimen (Kandavu); obtained at no other locality by the Challenger.
- „ *danæ* (M.-Edwards and Haime). One specimen (Fiji reefs); obtained at no other locality by the Challenger.
- Goniastrea cerium* (Dana). (Kandavu); obtained at no other locality by the Challenger.
- Acanthastrea irregularis*, n.sp. One specimen (Kandavu); obtained at no other locality.
- Prionastrea flexuosa* (Dana). (Kandavu); obtained at no other locality by the Challenger.
- „ *obtusata*, M.-Edwards and Haime. (Kandavu); obtained at no other locality by the Challenger.
- „ *quoyi*, M.-Edwards and Haime. (Fiji reefs); obtained at no other locality by the Challenger.
- Plesiastræa urvillei*, M.-Edwards and Haime. One specimen (Kandavu); obtained at no other locality by the Challenger.
- „ *indurata*, Verrill. One specimen (Kandavu); obtained at no other locality by the Challenger.

Fiji.

- Tichoseris obtusata*, n.g., n.sp. Two specimens (Fiji reefs); obtained at no other locality. Only species of the genus.
- Agaricia regularis*, n.sp. One specimen (Levuka); obtained at no other locality.
- Stephanaria stellata*, Verrill. (Kandavu); obtained also at Sandwich Islands. Recorded from Panama and California.
- Fungia confertifolia*, Dana. (Fiji reefs); obtained also at Banda.
- „ *valida*, Verrill. One specimen (Fiji reefs); obtained at no other locality by the Challenger. Recorded from Indian Ocean.
- Lithactinia pileiformis* (Dana). Two specimens (brought alongside by natives off Kandavu).
- „ *galeriformis* (Dana). Two specimens (brought alongside by natives off Kandavu).
- Dendrophyllia diaphana*, Dana. One specimen (Kandavu); obtained at no other locality by the Challenger.
- Madrepora cuneata*, Dana. One specimen and fragment (Fiji reefs); obtained at no other locality by the Challenger.
- „ *nobilis*, Dana. One specimen (Kandavu); obtained at no other locality by the Challenger.
- „ *robusta*, Dana. Two fragments (Kandavu and other reefs); obtained at no other locality by the Challenger.
- „ *scabrosa*, n.sp. One specimen (Levuka); obtained at no other locality.
- „ *seriata* (Ehrenberg). One specimen (Kandavu); obtained at no other locality by the Challenger.
- „ *hebes*, Dana. Three specimens (Kandavu and other reefs); obtained at no other locality by the Challenger.
- „ *pocillifera*, Lamarek. (Fiji reefs); obtained also at Tongatabu and New Hebrides.
- „ *laxa*, Lamarek. One specimen (Fiji reefs); obtained at no other locality by the Challenger.
- „ *pustulosa*, M.-Edwards and Haime. One specimen (Levuka); obtained at no other locality by the Challenger.
- „ *ramiculosa*, Dana. One specimen (Fiji reefs); obtained at no other locality by the Challenger.
- „ *confraga*, n.sp. One specimen (Kandavu—brought up in trammels at anchorage); obtained at no other locality.
- „ *echinata*, Dana. Two specimens (Fiji reefs); obtained at no other locality by the Challenger.
- „ *rosaria*, Dana. Two specimens (Levuka); obtained at no other locality by the Challenger.

- Madrepora hyacinthus*, Dana. One specimen (Levuka); obtained at no other locality by the Challenger. Fiji.
- „ *conferta*, n.sp. One specimen (Fiji reefs); obtained at no other locality.
- „ *vastula*, n.sp. One specimen (Kandavu); obtained at no other locality.
- Turbinaria stellulata* (Blainville). One specimen (Fiji reefs); obtained at no other locality by the Challenger.
- Anacropora solida*, n.sp. Two fragments (Kandavu); obtained at no other locality.
- Montipora palmata* (Dana). (Fiji reefs); obtained at no other locality by the Challenger.
- „ *rubra* (Quoy and Gaimard). Several specimens (Fiji reefs); obtained at no other locality by the Challenger.
- „ *levis*, n.sp. (Fiji reefs); obtained also at Banda.
- „ *obtusata*, n.sp. (Fiji reefs); obtained at no other locality.
- „ *foveolata* (Dana). (Kandavu); obtained at no other locality by the Challenger.
- „ *caliculata* (Dana). Fragment (Kandavu); obtained at no other locality by the Challenger.
- „ *scabricula* (Dana). One specimen (Fiji reefs); obtained at no other locality by the Challenger.
- Porites crassistellata*, n.sp. One specimen (Kandavu); obtained at no other locality.
- „ *arenosa* (Esper). (Kandavu and other reefs); obtained also at Tongatabu, Banda, and Tahiti.
- „ *crassa*, n.sp. One specimen (Fiji reefs); obtained at no other locality.
- Millepora gonagra*, M.-Edwards and Haime. (Kandavu); obtained also at Philippines and Tahiti.

ASTEROIDEA (Sladen, Zool. pt. 51).

- Archaster typicus*, Müller and Troschel. (Kandavu reefs); obtained also at Station 200 and Philippines, reefs to 250 fathoms. Recorded from Indian and Pacific Oceans.
- Choriaster granulatus*, Lütken. (Off Kandavu); obtained also at Station 212, 10 fathoms. Recorded from New Zealand, Pelew, and Fiji Islands.
- Gymnasteria carinifera* (Lamarck), Martens. Three specimens (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Fromia milleporella* (Lamarck), Gray. (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.

Fiji

- Ophidiaster cylindricus* (Lamarek), Müller and Troschel. (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Leiaster speciosus*, Martens. (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Flores.
- Linckia miliaris* (Linck), Martens. (Kandavu reefs); obtained also at Philippines. Recorded from Indian and Pacific Oceans.
- „ *pacifica*, Gray, var. *diplax* (Müller and Troschel). (Kandavu reefs); obtained also at Tongatabu.
- Acanthaster echinites* (Ellis and Solander), Lütken. (Kandavu reefs); obtained also at Philippines. Recorded from Indian and Pacific Oceans.
- Mithrodia clavigera* (Lamarek), Perrier. (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Asterias (Stolasterias) gemmifera* (Valenciennes, MS.), Perrier. (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Chili.

OPHIUROIDEA (Lyman, Zool. pt. 14).

- Pectinura gorgonia* (Müller and Troschel). (Fiji Islands); obtained at no other locality by the Challenger.
- „ *rigida*, Lyman. (Fiji Islands—Levuka reefs ?); obtained at no other locality by the Challenger.
- Ophiochaeta setosa*, Lütken. (Fiji Islands); obtained at no other locality by the Challenger.
- Amphiura depressa* (Ljungman) (?). (Fiji Islands, 6 fathoms); obtained also at Station 233B, 15 fathoms.
- Ophionereis dubia* (Müller and Troschel) (?). (Fiji Islands); obtained also at Canaries (?) and Amboina.
- Ophiocoma scolopendrina*, Agassiz. (Fiji Islands); obtained also at Simon's Bay, Cape, Tongatabu, and Philippines.
- Ophiomastix caryophyllata*, Lütken. (Fiji Islands); obtained also at Philippines.
- „ *mixta*, Lütken. (Fiji Islands); obtained at no other locality by the Challenger.
- Ophiothrix longipoda* (Lamarek). (Fiji Islands); for distribution see Tongatabu.
- „ *stelligera*, Lyman. (Fiji Islands); obtained also at Station 186, Arafura Sea (?), and Philippines.
- „ *propinqua*, Lyman. (Levuka reefs); obtained also at Tongatabu (?) and Philippines (?).

Ophiothrix martensi, Lyman. (Fiji Islands, 6 fathoms); obtained at no other locality by the Challenger. Fiji.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Echinothrix calamaris (Pallas). (Kandavu reefs); obtained also at Philippines and Tahiti.

„ *turcarum* (Schynv.). (Kandavu reefs); obtained also at Sandwich Islands.

Heterocentrotus mammillatus (Klein). (Kandavu reefs); obtained at no other locality by the Challenger.

Echinometra lucunter (Leske). (Kandavu reefs); obtained also at Tongatabu, Philippines, Sandwich Islands, and Tahiti.

Hipponoë variegata (Leske). (Kandavu reefs); obtained also at Port Jackson and Philippines.

Evechinus chloroticus (Val.). (Kandavu reefs); obtained at no other locality by the Challenger.

Maretia planulata, Gray. (Levuka reefs); obtained also at Port Jackson and Admiralty Islands.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Stichopus chloronotus, Brandt. Five specimens (Fiji Islands); obtained also at Tongatabu.

Holothuria monacaria, Lesson. Two specimens (Fiji Islands); obtained also at Ternate. Recorded from Indian and Pacific Oceans.

„ *impatiens*, Forskål. One specimen (Fiji Islands); obtained also at Sandwich Islands. A widely-distributed species.

„ *vagabunda*, Selenka. One specimen (Fiji Islands); obtained also at Tongatabu and Philippines.

„ *atra*, Jæger. One specimen (Fiji Islands); obtained also at Station 177, 130 fathoms, and Amboina. A widely-distributed species.

ANNELIDA (M'Intosh, Zool. pt. 34).

Eurythoë pacifica, Kinberg, var. *levukaensis*, nov. (Levuka); the species obtained also at Bermuda.

Psammolyce fijiensis, n.sp. One specimen (off Levuka); obtained at no other locality.

Palolo viridis, Gray. Several fragments (Fiji); obtained at no other locality by the Challenger. Recorded from Navigator, Fiji, Samoa, and New Hebrides Islands.

FIJI.

STOMATOPODA (Brooks, Zool. pt. 45).

Protosquilla cerebralis, n.g., n.sp. One specimen (Levuka reefs); obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Thalassina scorpionoides, Latreille. One specimen (Kandavu); obtained at no other locality by the Challenger.

Stenopus hispidus, Olivier. (Kandavu); obtained also at Bermuda.

Betæus malleodigitus, n.sp. One specimen (Levuka reefs); obtained at no other locality.

Bithynis lar (Fabricius). Twenty-three specimens (Kandavu and Ovalau); obtained also at Banda, Philippines, and Tahiti.

Oodeopus duplex, n.g., n.sp. (Fiji Islands); obtained also at New Hebrides and Cape York.

ANOMURA (Henderson, Zool. pt. 69).

Cænobita rugosa, M.-Edwards. (Kandavu, shore); obtained also at New Hebrides, Arrou Islands, Admiralty Islands, and Tahiti. Recorded from Indo-Pacific region.

„ *perlata*, M.-Edwards. Two specimens (Kandavu, shore); obtained also at New Hebrides. Recorded from Pacific Islands.

Catapagurus australis, n.sp. One specimen (Levuka reefs); obtained also at Station 188, 28 fathoms.

BRACHYURA (Miers, Zool. pt. 49).

Zoysmus æneus (Linné). Two specimens (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Red Sea and Mauritius to Polynesia.

Trapezia guttata, Rüppell, var. One specimen (Kandavu reefs); obtained at no other locality by the Challenger. Recorded from Red Sea.

„ *areolata*, Dana, var. *inermis*, M.-Edwards. One specimen (Kandavu); obtained at no other locality by the Challenger. Recorded from Polynesia and Loo Choo.

Thalamita admete (Herbst). One specimen (Levuka reefs); obtained also at Tongatabu.

Cardiosoma carnifer (Herbst). One specimen (Kandavu); obtained also at Admiralty Islands and Tahiti. Recorded from Oriental region.

Ocypoda ceratophthalma (Pallas). Several specimens (Kandavu); one specimen (Matuku, fresh water); obtained also at Port Jackson, Raine Island, Philippines, and Sandwich Islands.

- Gelasimus vocans* (Linné). One specimen (Kandavu); obtained also at Arrou Islands. FIJI.
- „ *annulipes*, M.-Edwards. Several specimens (Kandavu); five specimens (Matuku); obtained also at Philippines.
- Euplax* (*Chænostoma*) *boscii* (Audouin). One specimen (Kandavu); obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.
- Metopograpsus messor* (Forskål), var. *frontalis*, nov. One specimen (Kandavu); obtained also at Sandwich Islands and Tahiti. The species recorded from Indo-Pacific region.
- Geograpsus grayi* (M.-Edwards). Two specimens (Kandavu); obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.
- Pseudograpsus albus*, Stimpson. Two specimens (Kandavu); obtained at no other locality by the Challenger.
- Helice latreillei*, M.-Edwards, var. One specimen (Kandavu); obtained also at Philippines. Recorded from Mauritius.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Tellina* (*Angulus*) *valtonis*, Hanley. One specimen (Levuka, shallow water); obtained at no other locality by the Challenger. Original locality unknown.
- „ („ ?) *rhomboides*, Quoy and Gaimard. (Levuka, 12 fathoms); obtained also at Cape York. Recorded from Indian and Pacific Oceans.
- „ (*Arcopagia*) *pretiosa*, Deshayes. (Levuka, shallow water); obtained at no other locality by the Challenger. Recorded from Fiji and Philippines.
- „ (—— ?) *tenuilirata*, Sowerby. (Levuka, 12 fathoms); obtained also at Port Jackson and Torres Strait.
- „ (—— ?) *fijiensis*, Sowerby. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Fiji and Lord Hood's Island.
- „ (—— ?) *semen*, Hanley. (Levuka, 12 fathoms); obtained also at Station 187, 6 fathoms, and Flinders Passage. Original locality unknown.
- Venus* (*Chione*) *marica*, Linné. (Levuka, shallow water); obtained at no other locality by the Challenger. Recorded from Fiji, Philippines, Réunion, and Mauritius.

Fiji

- Venus (Chione) levukensis*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Cytherea (Dione) philippinarum*, Hanley. (Levuka, 12 fathoms); obtained also at Banda and Tahiti. Recorded from Philippines and Marquesas Islands.
- Circe sulcata*, Gray. (Levuka, 12 fathoms); obtained also at Station 212, 10 to 20 fathoms.
- „ *gordoni*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Cardium (Acanthocardium) sueziense*, Issel. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Gulf of Suez.
- „ (*Bucardium*) *australe*, Sowerby. (Levuka, shallow water); obtained also at Station 208, 18 fathoms. Recorded from Indian and Pacific Oceans.
- Lucina (Codakia) levukana*, n.sp. Two valves (Levuka, 12 fathoms); obtained at no other locality.
- „ („) *fijiensis*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ (*Loripes* ?) *gordoni*, n.sp. Single valve (Levuka, 12 fathoms); obtained at no other locality.
- Cryptodon rufolineatus*, n.sp. Single valve (Levuka, 12 fathoms); obtained at no other locality.
- Leda micans*, Adams. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand.
- Arca (Barbatia) fusca*, Bruguière. (Kandavu); obtained at no other locality by the Challenger. Recorded from Indian Ocean and Australia.
- Septifer bilocularis* (Linné). (Levuka, 12 fathoms); obtained at no other locality by the Challenger.
- Mytilus magellanicus*, Chemnitz. One specimen (Kandavu); obtained also at Kerguelen and Falklands.
- Lima (Ctenoides) tenera*, Chemnitz. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.

SCAPHOPODA AND GASTEROPODA (Watson, Zool. pt. 42).

- Dentalium tornatum*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Sphodentalium dichelum*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.

- Trochus niloticus*, Linné. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans. Fiji.
- „ (*Solariella*) *lamprus*, n.sp. One specimen (Levuka, 12 fathoms); obtained at no other locality.
- Cyclostrema*, three species undetermined.
- Turbo smaragdus* (Martyn). (Kandavu reefs); obtained also at New Zealand.
- „ (*Senectus*) *chrysostomus*, Linné. (Levuka, 12 fathoms); obtained also at Tongatabu and Torres Strait.
- „ (*Lunella*) *coronatus*, var. *granulatus*, Gmelin. (Kandavu, inhabited by land-crabs); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ (*Bolina*) *lapillus*, Reeve. Two specimens (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Original locality unknown.
- Nerita albicilla*, Linné. (Kandavu, inhabited by land-crabs); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Murex* (*Tribulus*) *ternispina*, Lamarck. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Red Sea, China, and Philippines.
- Purpura* (*Thalessa*) *pica*, Blainville. One specimen (Kandavu, some distance inland, occupied by hermit-crab); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Nassa agapeta*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ (*Niotha*) *stigmara*, Adams. (Levuka, 12 fathoms); obtained also at Station 172.
- „ (*Arcularia*) *granifera* (Kiener). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian Ocean and Tahiti.
- „ (*Zeuxis*) *levukensis*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ (*Hebra*) *echinata*, Adams. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Andamans.
- „ („) *muricata* (Quoy and Gaimard). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ sp. (?).

Fiji

- Pisania (Cantharus) undosa* (Linné). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Columbella (Mitrella) albina*, Kiener. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Fiji and Philippines.
- „ (*Pusiosoma*) *mendicaria* (Linné). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ (*Zafra*) *trogloodytes*, Souverbie. (Levuka, 12 fathoms); obtained also at Station 186, 8 fathoms, and Sandwich Islands. Recorded from New Caledonia and Papua.
- „ sp. (?).
- Fasciolaria (Latirus) strangei*, Adams. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Mitra (Scabricola) crenifera*, Lamarck. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ („) *sphaerulata*, Martyn. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Ticao, Philippines, and Tahiti.
- „ (*Cancilla*) *cyri*, Dohrn. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from New Caledonia and Red Sea.
- „ („) *filaris* (Linné). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ („) *interlirata*, Reeve. (Levuka, 12 fathoms); obtained also at Stations 172, 185B, and Arrou Islands.
- „ („) *verrucosa*, Reeve. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Fiji, Ticao, and Philippines.
- „ (*Costellaria*) *amanda*, Reeve. (Levuka, 12 fathoms); obtained also at Station 186, 8 fathoms. Recorded from Philippines.
- „ („) *exasperata* (Chemnitz). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian Ocean (Africa to Malay Peninsula).

- Mitra* (*Costellaria*) *fusiformis*, Kiener. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Zanzibar. FIG.
- „ („) *nodilirata*, Adams (?). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Original locality unknown.
- „ („) *radius*, Reeve. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ (*Pusia*) *nodulifera*, Adams. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Solomons and Philippines.
- „ (*Callithea*) *obeliscus*, Reeve. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ („) *granosa* (Chemnitz). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ sp. (?). (Levuka, 12 fathoms).
- Marginella* sp. (?). (Levuka, 12 fathoms).
- Pleurotoma marmorata*, Lamarck. (Levuka, 12 fathoms); obtained also at Stations 187 and 208, 6 and 18 fathoms. Recorded from Australia, Moluccas, Philippines, and China.
- „ *monilifera* (Pease). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Sandwich Islands.
- „ *tigrina*, Lamarck. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ (*Surcula*) *brevicaudata*, Reeve. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.
- „ (*Mangelia*) *nitens* (Hinds). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from West Pacific.
- „ („) *levukensis*, n.sp. One specimen (Levuka, 12 fathoms); obtained at no other locality.
- Terebra albomarginata*, Deshayes. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *conspersa* (Hinds). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.

Fiji.

- Terebra maculata* (Linné). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans. Fossil—shores of Red Sea.
- „ *muscaria*, Lamarek. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ *straminea*, Gray. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from West Pacific (Australia to China).
- „ (*Myurella*) *amana*, Deshayes. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from China Sea.
- „ („) *babylonia*, Lamarek. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ („) *undulata*, Gray. (Levuka, 12 fathoms); obtained also at Station 212, 10 to 20 fathoms. Recorded from Torres Strait, New Guinea, Malacca Strait, and Philippines.
- Conus (Puncticulis) arenatus*, Hwass. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ (*Lithoconus*) *eburneus*, Hwass. (Levuka, 12 fathoms); obtained also at Station 212, 10 to 20 fathoms. Recorded from Indian and Pacific Oceans.
- „ (*Leptoconus*) *vittatus*, Hwass (?). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ (*Cylinder*) *textile*, Linné. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Triton (Cymatium) tuberosus*, Lamarek. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from West Indies, and Indian and Pacific Oceans.
- Ranella (Lampas) granifera*, Lamarek. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian Ocean and Australia.
- „ (*Argobuccinum*) *pusilla*, Broderip. (Levuka, 12 fathoms); obtained also at Station 172 and Torres Strait.
- Strombus (Canarium) gibberulus*, Linné. (Levuka, 12 fathoms); obtained also at Tougatabu.

- Strombus (Canarium) rugosus*, Sowerby. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from East Indies, Korea, and Philippines. FIJI.
- „ („) *rupellii*, Reeve. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Red Sea.
- „ (*Gallinula*) *vittatus*, Linné. (Levuka, 12 fathoms); obtained also at Station 203, 20 fathoms. Recorded from East Indies, Philippines, Moluccas, and Australia.
- Cypræa microdon*, Gray. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Natica pseustes*, n.sp. (Levuka, shallow water); obtained at no other locality.
- „ sp. (?). (Levuka, 12 fathoms).
- Capulus* (?) sp. (Levuka, 12 fathoms).
- Amalthea acuta* (Quoy and Gaimard). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, New Ireland, and Pacific Islands.
- Turritella cingulifera*, Sowerby. (Levuka, 12 fathoms); obtained also at Station 188, 28 fathoms, Torres Strait, and Amboina. Recorded from East Indies, Torres Strait, and Fiji.
- „ *fascialis*, Menke. (Levuka, 12 fathoms); obtained also at Torres Strait, 3 to 12 fathoms. Recorded from Fiji and Japan.
- Pyramidella nodicincta*, Adams. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- Odostomia*, two species undetermined. (Levuka, 12 fathoms).
- Eulima fallax*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Cerithiopsis balteata*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ sp. (?). Levuka, 12 fathoms).
- Cerithium balteatum*, Philippi. (Levuka, 12 fathoms); obtained also at Torres Strait, 3 to 12 fathoms. Recorded from Torres Strait and Philippines.
- „ *columna*, Sowerby (?). One specimen (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ *dubium*, Sowerby. (Levuka, 12 fathoms); obtained also at Station 186 and Flinders Passage, 8 and 7 fathoms. Recorded from Australia and Tasmania.
- „ *salebrosus*, Sowerby. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Lord Hood's Island and Australia.

Fus.

- Cerithium phorum*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ *lessium*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ *tuberculatum*, Linné, var. *variegatum*, Quoy. (Kandavu, inhabited by land-crabs).
- „ (*Vertagus*) *asperum* (Linné). (Levuka); obtained also at Tongatabu.
- Triforis levukensis*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Alaba (Stiliferina) striata*, n.sp. (Levuka, 12 fathoms); obtained also at Tahiti.
- Planaxis sulcata* (Born). (Matuku, beach); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Barleeia imbricata*, n.sp. (Levuka, 12 fathoms); obtained also at Torres Strait and Sandwich Islands, 3 to 40 fathoms.
- Rissoina triticea*, Pease. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ *transenna*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Actæon flammeus* (Gmelin). (Levuka, 12 fathoms); obtained also at Stations 172 and 188.
- „ (*Buccinulus*) *cinereus*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- Bulla australis*, Quoy and Gaimard. (Levuka, 12 fathoms); obtained also at Port Jackson.
- Atys cylindrica* (Helbling). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ *debilis*, Pease. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Sandwich Islands.
- „ *parallela*, Gould (?). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Original locality unknown.
- „ *hyalina*, n.sp. (Levuka, 12 fathoms); obtained also at Stations 186 and 187, 8 and 6 fathoms.
- „ (*Dinia*) *dentifera*, Adams. (Levuka, 12 fathoms); obtained also at Station 186, 8 fathoms. Recorded from Mauritius, Lord Hood's Island, and Polynesia.
- Utriculus famelicus*, n.sp. (Levuka, 12 fathoms); obtained at no other locality.
- „ (*Tornatina*) *voluta* (Quoy and Gaimard). (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Guam Island and Torres Strait.
- „ sp. (?). (Levuka, 12 fathoms).
- Cylichna cuticulifera* (Smith). (Levuka, 12 fathoms); obtained also at Port Jackson.

Cylichna (Mnestia) bizona, Adams. (Levuka, 12 fathoms); obtained at no other locality by the Challenger. Recorded from Chinese and Australian seas. FIG.

Neritina sp. (?). (Levuka, 12 fathoms).

POLYPLACOPHORA (Haddon, Zool. pt. 43).

Cryptoplax larvæformis, Blainville. (Kandavu, shallow water); obtained at no other locality by the Challenger. Recorded from Tongatabu and Philippines.

NUDIBRANCHIATA (Bergh, Zool. pt. 26).

Onchidium melanopneumon, n.sp. One specimen (Kandavu, shallow water); obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Octopus vitiensis, n.sp. One specimen (Kandavu reefs); obtained at no other locality.

TUNICATA (Herdman, Zool. pt. 17).

Cynthia pallida, Heller. Two specimens (Kandavu); obtained also at the Cape.

FISHES (Günther, Zool. pts. 6 and 78).

Serranus hexagonatus, Forster. (Levuka); obtained at no other locality by the Challenger.

Plectropoma maculatum, Bl. (Levuka); obtained at no other locality by the Challenger.

Mesoprion bengalensis, Bl. (Kandavu); obtained at no other locality by the Challenger.

„ *fulviflamma*, Forsk. (Kandavu and Levuka); obtained also at Tongatabu.

„ *marginatus*, C.V. (Levuka); obtained at no other locality by the Challenger.

„ *semicinctus* (Quoy and Gaimard). (Levuka); obtained at no other locality by the Challenger.

Apogon savayensis, Günther. (Levuka); obtained at no other locality by the Challenger.

Therapon servus, Linné. (Kandavu and Levuka); obtained also at Cape York.

„ *oxyrhynchus*, Schleg. (Ovalau); obtained at no other locality by the Challenger.

FISH.

- Dules rupestris*, Lac. (Ovalau); obtained at no other locality by the Challenger.
- „ *marginatus*, C.V. (Ovalau); obtained also at Sandwich Islands and Tahiti.
- Diagramma pardale*, C.V. (Ovalau); obtained at no other locality by the Challenger.
- „ *pictum*, Thunb. (Ovalau); obtained at no other locality by the Challenger.
- Scolopsis bilineatus*, Bl. (Levuka and Ovalau); obtained at no other locality by the Challenger.
- „ *temporalis*, C.V. (Kandavu); obtained at no other locality by the Challenger.
- Gerres oyena*, Forsk. (Kandavu); obtained also at Tongatabu.
- Lethrinus nebulosus*, Forsk. (Levuka); obtained also at Cape York.
- „ *ramak*, Forsk. (Levuka); obtained at no other locality by the Challenger.
- „ *noensi*, Bleeker. (Kandavu); obtained at no other locality by the Challenger.
- „ *hæmatopterus*, Schleg. (Kandavu); obtained at no other locality by the Challenger.
- Sphærodon grandoculis*, Forsk. (Kandavu); obtained also at Admiralty Islands.
- Scorpaena zanzibarensis*, Playfair. (Levuka); obtained at no other locality by the Challenger. Recorded from Zanzibar.
- Pterois zebra*, C.V. (Levuka); obtained at no other locality by the Challenger.
- Synanceia verrucosa*, Bl. (Ovalau); obtained at no other locality by the Challenger.
- Chatodon rafflesi*, Benn. (Ovalau); obtained at no other locality by the Challenger.
- „ *vagabundus*, Linné. (Ovalau); obtained at no other locality by the Challenger.
- Holacanthus cyanotis*, Günther. (Kandavu); obtained at no other locality by the Challenger.
- Heniochus macrolepidotus*, Linné. (Ovalau); obtained at no other locality by the Challenger.
- Myripristis murdjan*, Forsk. (Ovalau); obtained at no other locality by the Challenger.
- Upeneus indicus*, Shaw. (Kandavu); obtained at no other locality by the Challenger.
- Upeneoides vittatus*, Forsk. (Ovalau); obtained at no other locality by the Challenger.
- Percis hexophthalma*, C.V. (Levuka); obtained at no other locality by the Challenger.
- Plesiops corallicola*, Bleeker. (Levuka); obtained at no other locality by the Challenger.
- Caranx speciosus*, Forsk. (Levuka); obtained also at Cape York.
- Platax orbicularis*, Forsk. (Kandavu); obtained also at Admiralty Islands.
- Psettus argenteus*, Linné. (Levuka); obtained at no other locality by the Challenger.
- Equula fasciata*, Lac. (Ovalau); obtained also at Station 203.

- Acanthurus triostegus*, Linné. (Ovalau); obtained at no other locality by the Challenger. FISH.
- „ *blochi*, C.V. (Ovalau); obtained also at Admiralty and Sandwich Islands.
- „ *gahm*, Forsk. (Kandavu); obtained at no other locality by the Challenger.
- „ *rhombeus*, Kittl. (Levuka); obtained at no other locality by the Challenger.
- Nascus marginatus*, C.V. (Ovalau); obtained at no other locality by the Challenger.
- Teuthis marmorata*, Quoy and Gaimard. (Kandavu); obtained at no other locality by the Challenger.
- „ *hexagonata*, Bleeker. (Kandavu); obtained at no other locality by the Challenger.
- Gobius phalæna*, C.V. (Ovalau); obtained at no other locality by the Challenger.
- Euctenogobius ophthalmonema* (Bleeker). (Kandavu); obtained at no other locality by the Challenger.
- Eleotris macrolepidota*, Bl. (Ovalau); obtained also at Mary River, Queensland.
- „ *fusca*, Bl. Schn. (Levuka); obtained also at Sandwich Islands and Tahiti.
- „ *longipinnis*, Benn. (Ovalau); obtained at no other locality by the Challenger.
- Periophthalmus kölreuteri*, Pall. (Kandavu); obtained at no other locality by the Challenger.
- Petroscirtes oualanensis*, n.sp. (Ovalau); obtained at no other locality.
- „ sp. (?). (Ovalau).
- Atherina lacunosa*, Forst. (Levuka); obtained at no other locality by the Challenger.
- Pomacentrus scolopsis*, Quoy and Gaimard. (Levuka); obtained at no other locality by the Challenger.
- Glyphidodon xanthozona*, Bleeker. (Levuka); obtained at no other locality by the Challenger.
- „ *assimilis*, Günther. (Ovalau); obtained at no other locality by the Challenger.
- PlatyGLOSSUS trimaculatus*, Quoy and Gaimard. (Levuka); obtained at no other locality by the Challenger.
- Julis dorsalis*, Quoy and Gaimard. (Ovalau); obtained at no other locality by the Challenger.
- Chilinus trilobatus*, Lac. (Levuka); obtained at no other locality by the Challenger.
- „ *chlorurus*, Bl. (Levuka); obtained at no other locality by the Challenger.
- Pseudoscarus nuchipunctatus*, C.V. (Kandavu); obtained also at Hong Kong.
- „ *macrorhinus*, Bleeker. (Kandavu); obtained at no other locality by the Challenger.
- Rhomboidichthys* sp. (?). (Levuka).

FIJI.

- Solea heterorhina*, Bleeker. (Ovalau); obtained at no other locality by the Challenger.
Saurus varius, Lac. (Ovalau); obtained at no other locality by the Challenger.
Belone annulata, C.V. (Kandavu, Levuka, and Ovalau); obtained also at Cape York.
Hemirhamphus commersoni, Cuvier. (Kandavu); obtained also at Cape York.
Clupea tembang, Bleeker. (Kandavu and Levuka); obtained at no other locality by the Challenger.
Megalops cyprinoides, Brouss. (Ovalau); obtained also at Mary River, Queensland.
Anguilla mauritiana, Benn. (Levuka, freshwater, and Ovalau); obtained also at Queensland and Tahiti.
Murana polyuranodon, Bleeker. (Ovalau); obtained at no other locality by the Challenger.
Dorichthys brachyurus, Bleeker. (Ovalau); obtained at no other locality by the Challenger.
Balistes stellatus, Lac. (Kandavu); obtained at no other locality by the Challenger.
 „ *fuscus*, Bl. Schn. (Kandavu); obtained at no other locality by the Challenger.
 „ *aculeatus*, Linné. (Kandavu); obtained at no other locality by the Challenger.
Tetrodon immaculatus, Bl. (Ovalau); obtained also at Station 203.
Ostracion cornutus, Linné. (Ovalau); obtained also at Botany Bay, Australia.
 „ *cubicus*, Linné. (Ovalau); obtained at no other locality by the Challenger.
Echeneis naucrates, Linné. (Kandavu); obtained also at St. Thomas.

In the foregoing list 338 species are enumerated, of which 52 are new to science, including representatives of 5 new genera; 44 of the new species and 2 new genera were not obtained elsewhere.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species are recorded from the surface in the neighbourhood of the Fijis:—

COPEPODA (Brady, Zool. pt. 23).

- Calanus gracilis*, Dana.
Eucalanus attenuatus (Dana).
Pleuromma abdominale (Lubbock).
Undina vulgaris, Dana.
Heterochata spinifrons, Claus.
Leuckartia flavicornis, Claus (?).
Scolecithrix dana (Lubbock).
Temora dubia (Lubbock).
Euchata prestandrea, Philippi.
Candace pachydactyla, Dana.

- Candace truncata*, Dana.
Calanopia elliptica, Dana.
Pontella plumata (Dana).
Corycaeus varius, Dana.
Copilia mirabilis, Dana.
Oncaea obtusa, Dana.
Saphirina ovalis, Dana.
 „ *inaequalis*, Dana.
 „ *opalina*, Dana.
Saphirinella stylifera (Lubbock).

SCHIZOPODA (Sars, Zool. pt. 37).	<i>Agadina stimpsoni</i> , Adams [= larval Gasteropod].	FIG.
<i>Euphausia gibba</i> , n.sp.	„ n.sp. [= larval Gasteropod].	
„ <i>pellucida</i> , Dana.	<i>Clio</i> (<i>Creseis</i>) <i>acicula</i> (Rang).	
<i>Thysanopoda tricuspidata</i> , M.-Edwards.	„ (<i>Hyalocylix</i>) <i>striata</i> (Rang).	
<i>Stylocheiron carinatum</i> , n.g., n.sp.	„ (<i>Styliola</i>) <i>subula</i> (Quoy and Gaimard).	
	„ <i>pyramidata</i> , Linné.	
MACRURA (Spence Bate, Zool. pt. 52).	<i>Cuvierina columnella</i> (Rang).	
<i>Penæus canaliculatus</i> , Olivier.	<i>Cavolinia quadridentata</i> (Lesueur).	
<i>Lucifer reynaudii</i> , M.-Edwards.	„ <i>longirostris</i> (Lesueur).	
<i>Thalassocaris danæ</i> , n.sp.	„ <i>inflexa</i> (Lesueur).	
„ <i>stimpsoni</i> , n.sp.	CEPHALOPODA (Hoyle, Zool. pt. 44).	
<i>Caricyphus serramarginis</i> , n.sp.	<i>Sepioteuthis lessoniana</i> , Férussac.	
PTEROPODA (Pelseneer, Zool. pt. 65).	TUNICATA (Herdman, Zool. pt. 76).	
<i>Limacina inflata</i> (d'Orbigny).	<i>Doliolum denticulatum</i> , Quoy and Gaimard.	
„ <i>lesueurii</i> (d'Orbigny).	„ <i>challengeri</i> , n.sp.	
„ <i>bulimoides</i> (d'Orbigny).		

In addition, the following are recorded in the note-books:—*Peridinium* (eleven individuals counted in one chain), many specimens of *Pyrocystis*, green spherical Algæ (*Halosphæra*), *Ethmodiscus* and other Diatoms, *Globigerina*, *Orbulina*, *Rotalia* attached to fragment of seaweed, several species of Radiolaria, yellow-haired Cœlenterate larva of Semper, several forms of oceanic Hydrozoa, many Echinoderm larvæ, *Sagitta*, *Alciopa*, *Phronima*, *Hyperia*, *Oxycephalus*, Squillid larvæ, *Phyllosoma* and many larvæ of the higher Peneid and Caridid Decapoda, several species of small shells, *Atlanta* and Pteropod shells sometimes very abundant, *Theceurybia* [= *Halopsyche*] *gaudichaudi*, Pteropod larvæ, *Salpa*, *Appendicularia*, many small fishes (young Macrurids, young of *Maurolicus* (?), and three very curious little fishes resembling Hooker's figure of *Ostracion boops* in the British Museum Catalogue), and eggs of fish with embryos.

Willemoes-Suhm writes: "Among a fine collection of Pteropods and Crustacea taken in the tow-net on the night of August 11-12, was a curious pigment larva, with a row of long yellow hairs, and with thread-cells in its skin, which has been figured by Semper as 'unbekannte Cœlenteraten larve' in the *Zeitschr. f. wiss. Zool.*, Bd. xvii. pp. 407-411, 1867."

STATION 175

Station 175 (Sounding 305), Fiji to Raine Island (see Chart 27 and Diagram 13).

August 12, 1874; lat. $19^{\circ} 2' S.$, long. $177^{\circ} 10' E.$

Temperature of air at noon, $73^{\circ} \cdot 8$; mean for the day, $75^{\circ} \cdot 2$.

Temperature of water :—

Surface, ...	77 $\cdot$ 5	600 fathoms, ...	38 $\cdot$ 9
50 fathoms, ...	71 $\cdot$ 5	700 „	37 $\cdot$ 9
100 „	70 $\cdot$ 8	800 „	37 $\cdot$ 2
150 „	66 $\cdot$ 0	900 „	36 $\cdot$ 8
200 „	60 $\cdot$ 8	1000 „	36 $\cdot$ 4
250 „	54 $\cdot$ 2	1100 „	36 $\cdot$ 2
300 „	47 $\cdot$ 0	1200 „	36 $\cdot$ 0
400 „	42 $\cdot$ 0	Bottom, ...	36 $\cdot$ 0
500 „	40 $\cdot$ 0		

Density at $60^{\circ} F.$:—

Surface, ...	1 $\cdot$ 02647	200 fathoms, ...	1 $\cdot$ 02647
100 fathoms, ...	1 $\cdot$ 02664	Bottom, ...	1 $\cdot$ 02633

Depth, 1350 fathoms; deposit, Globigerina Ooze, containing 44 $\cdot$ 43 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6 A.M. shortened and furled sails, and got up steam to sound and trawl. Sounded in 1350 fathoms. At 9 A.M. put trawl over. Obtained serial temperatures, and samples of water for analysis from 100 and 200 fathoms, and bottom. At 3.20 P.M. hove up trawl containing pumice-stones, a few specimens, and a piece of a branch of a tree, about 3 feet long, carbonised (?) at the projecting points. Made all plain sail.

Distance at noon from Api Island, New Hebrides, 574 miles. Made good 17 miles. Amount of current 9 miles, direction S. $81^{\circ} W.$

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

SIPHONOPHORÆ (Haeckel, Zool. pt. 77).

Diphyopsis angustata (Eschscholtz). Obtained also at Stations 222 and 265 to 279.

CRINOIDEA (Carpenter, Zool. pts. 32 and 60).

Pentacrinus naresianus, n.sp. Two fragments; obtained also at Stations 170, 171, 210 (?), and 214.

- Antedon breviradia*, n.sp. One specimen; obtained also at Station 170. STATION 175.
 „ *acutiradia*, n.sp. Two specimens; obtained at no other locality.
 „ *basicurva*, n.sp. (?). Fragments; obtained also at Station 170.
 „ *inæqualis*, n.sp. (?). One specimen; obtained also at Stations 170 and 174.

OPHIUROIDEA (Lyman, Zool. pt. 14).

- Ophiacantha placentigera*, n.sp. Obtained at no other locality.
Ophiambix aculeatus, n.g., n.sp. Obtained at no other locality. Only species of the genus.
Ophiogeron edentulus, n.g., n.sp. Obtained also at Station 76. Only species of the genus.
Ophiohelus pellucidus, n.g., n.sp. Obtained at no other locality.

ISPODA (Beddard, Zool. pt. 48).

- Janira abyssicola*, n.sp. One specimen; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

- Glyphocrangon acuminata*, n.sp. Twenty-two specimens; obtained at no other locality.

In addition to the foregoing, the following are recorded in the Station-book:—
 Minute starfish (young stage), fragment of worm, *Patella*-like shell and two small Gasteropods.

Excluding Protozoa, about 50 specimens of invertebrates were obtained at this Station, belonging to about 16 species, of which 11 are new to science, including representatives of 3 new genera; 6 of the new species and 1 new genus were not obtained elsewhere.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed during the examination of the deposit from this Station; the pelagic species, which make up nearly 80 per cent. of the carbonate of lime present in the deposit, are marked thus × :—

ORGANISMS FROM
THE DEPOSIT.

Biloculina depressa, d'Orbigny.
 „ „ var. *murrhyna*, Schwager.
Miliolina auberiana (d'Orbigny).
 „ *venusta* (Karrer).
Rhabdammina abyssorum, Sars.
Reophax nodulosa, Brady.
Haplophragmium glomeratum, Brady.
Textularia quadrilatera, Schwager.

Bulimina contraria (Reuss).
 „ *subteres*, Brady.
Bolivina karreriana, Brady.
 „ *nobilis*, Hantken.
Cassidulina subglobosa, Brady.
Chilostomella ovoidea, Reuss.
Lagena fimbriata, Brady.
 „ *lævigata* (Reuss).

STATION 175

Lagena stelligera, Brady.
Nodosaria mucronata (Neugeboren).
Uvigerina asperula, Czjzek.
 × *Globigerina aquilateralis*, Brady.
 × „ *bulloides*, d'Orbigny.
 × „ „ var. *triloba*, Reuss (?).
 × „ *conglobata*, Brady.
 × „ *dubia*, Egger.
 × „ *inflata*, d'Orbigny.
 × „ *rubra*, d'Orbigny.
 × „ *sacculifera*, Brady.
 × *Orbulina universa*, d'Orbigny.
 × *Pullenia obliquiloculata*, Parker and Jones.
 „ *quinqueloba*, Reuss.
 „ *sphaeroides* (d'Orbigny).

Sphaeroidina bulloides, d'Orbigny.
 × „ *dehiscens*, Parker and Jones.
 × *Candeina nitida*, d'Orbigny.
Truncatulina wuellerstorfi (Schwager).
 „ sp. (?).
 × *Pulvinulina canariensis* (d'Orbigny).
 × „ *crassa* (d'Orbigny).
 „ *elegans* (d'Orbigny).
 „ *favus*, Brady.
 × „ *menardii* (d'Orbigny).
 × „ *melchioriana* (d'Orbigny).
 × „ *tumida*, Brady.
 „ *umbonata*, Reuss.
Nonionina umbilicatula (Montagu).

August 13, 14, 1874.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—On these dates the tow-net was used several times, but never far below the surface, the following being procured:—Spherical Algæ (*Halosphæra*), *Ethmodiscus* and other Diatoms, *Pyrocystis*, *Globigerina*, *Orbulina*, Radiolaria, Echinoderm larvæ, *Sagitta*, many Copepods (especially *Saphirina*), *Phronima*, *Hyperia*, *Lucifer*, Zoëæ and many larval Crustacea, larval Lamellibranchs, *Atlanta*, *Styliola*, *Heterofusus* [= *Limacina*], and many other pelagic shells, small Cephalopods (*Cranchia*, &c.), *Salpa*, and small fish. From the stomach of a *Salpa* were obtained many Rhabdospheres and Coccospheres of various forms, a number of small Radiolaria and other siliceous organisms, and a single Diatom.

It may be remarked that in examining the deposit from 1350 fathoms (Station 175) not a single shell of Pteropods, *Atlanta*, or other pelagic Molluscs, was observed, although they occurred in the tow-nets at the surface in much greater abundance than the Foraminifera, which latter made up about 80 per cent. of the carbonate of lime present in the ooze.

STATION 176.

Station 176 (Sounding 306), Fiji to Raine Island (see Chart 27 and Diagram 13).

August 15, 1874; lat. 18° 30' S., long. 173° 52' E.

Temperature of air at noon, 75°·5; mean for the day, 75°·4.

Temperature of water:—

Surface, ...	77·5	175 fathoms, ...	61·0
25 fathoms, ...	76·0	200 „	56·8
50 „	75·2	300 „	45·2
75 „	72·9	400 „	41·8
100 „	69·7	500 „	40·3
125 „	67·0	Bottom, ...	36·2
150 „	64·0		

Density at 60° F. at surface, 1·02636 ; bottom, 1·02621.

STATION 176.

Depth, 1450 fathoms ; deposit, Globigerina Ooze, containing 62·41 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 8 A.M. got up steam. At 9.20 A.M. shortened and furled sails, proceeded under steam, and sounded in 1450 fathoms. Obtained serial temperatures down to 500 fathoms. At 11 A.M. completed observations and proceeded. The carbonic acid was determined in bottom water, and amounted to 45·9 milligrammes per litre. A gannet and a tern were observed, and a dark coloured bird was also reported, but birds were rarely observed from the ship.

Api Island distant at noon, 340 miles. Made good 76 miles. Amount of current 22 miles, direction W.

The following species are recorded in error from this Station ; they evidently came from the next Station (177) :—

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha undata, n.sp.

MACRURA (Spence Bate, Zool. pt. 52).

Nematocarcinus productus, n.sp.

POLYZOA (Busk, Zool. pts. 30 and 50).

Salicornaria malvinensis, Busk.

Retepora margaritacea, n.sp.

Crisia elongata, M.-Edwards.

Surface Organisms.—The following species is recorded from the surface in this locality :—

ORGANISMS FROM
THE SURFACE.

FISHES (Günther, Zool. pt. 78).

Exocoetus naresii, n.sp. One specimen (came on board ship on August 16, 1874).

This specimen came in at one of the ports while the ship was going at the rate of 7 or 8 knots, and nearly all the scales were off.

Station 177 (Sounding 307), off Api Island, New Hebrides (see Chart 27).

STATION 177
(API).

August 18, 1874 ; lat. 16° 45' S., long. 168° 7' E.

Temperature of air at noon, 75°·3 ; mean for the day, 75°·3.

Temperature of water at surface, 78°·7.

Density at 60° F. at surface, 1·02624.

Depth, 130 fathoms ; deposit, Volcanic Sand, containing 13·14 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

API.

At 8 A.M. got up steam. At 9 A.M. shortened and furled sails, proceeded under steam, and sounded in 130 fathoms. Steered towards a landing place on Api Island. At 10 A.M. stopped off the edge of the reef in 25 fathoms. Lowered boats, cutter and two whalers, and sent them on shore with the natives brought from Levuka. At 12.30 P.M. landed officers and naturalists. Dredged off the edge of the fringing coral reef in 63 fathoms, 125 fathoms, and 70 fathoms. In the haul from 125 fathoms the dredge was filled with the deposit, and in the hauls from 63 and 70 fathoms the dredge and swabs brought up many specimens. At 4 P.M. boats returned with officers and naturalists, and at 4.30 P.M. made all plain sail. Made good 69 miles.

ANIMALS FROM
API.

The following species are recorded in the Zoological Reports as having been obtained in the dredge in the vicinity of Api Island, New Hebrides :—

KERATOSA (Poléjaeff, Zool. pt. 31).

Hippospongia mauritiana (Hyatt). Three specimens (60 to 70 fathoms); obtained at no other locality by the Challenger.

Cacospongia spinifera, n.sp. One specimen (130 fathoms); obtained at no other locality.

„ *intermedia*, n.sp. One specimen (130 fathoms); obtained at no other locality.

Luffaria variabilis, n.sp. One specimen (60 to 70 fathoms); obtained also at Tahiti.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Halichondria solida, n.sp., var. *rugosa*, nov. One specimen (60 to 70 fathoms); the species obtained also at Tahiti.

Rhizochalina pedunculata, n.sp. One specimen (60 to 70 fathoms); obtained at no other locality.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Amphius huxleyi, n.g., n.sp. One specimen (60 to 70 fathoms); obtained at no other locality. Only species of the genus.

Thrombus challenger, n.g., n.sp. One specimen (130 fathoms); obtained at no other locality. Only species of the genus.

ALCYONARIA (Wright and Studer, Zool. pts. 64 and 81).

Villogorgia intricata (Gray). One specimen (63 to 130 fathoms); obtained at no other locality by the Challenger. Recorded from Bass Strait.

Scirpearella profunda, n.g., n.sp. One specimen (130 fathoms); obtained at no other locality. Ari.

„ *gracilis*, n.g., n.sp. Two specimens (130 fathoms); obtained at no other locality.

Melitodes nodosa, n.sp. Several fragments (63 to 130 fathoms); obtained also at Station 232, 345 fathoms.

Siphonogorgia pustulosa, n.sp. Two specimens (63 to 130 fathoms); obtained at no other locality.

Lobophytum marenzelleri, n.sp. One specimen (60 to 70 fathoms); obtained at no other locality.

ANTIPATHARIA (Brook, Zool. pt. 80).

Aphanipathes sarothamnoides, n.g., n.sp. (63 to 130 fathoms); obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Rhizotrochus fragilis, Pourtalès (?). Fragment (50 to 125 fathoms); obtained also at Station 142.

Neohelia porcellana, n.g., n.sp. Three specimens (63 fathoms); obtained at no other locality. Only species of the genus.

REEF CORALS (Quelch, Zool. pt. 46).

Pocillopora brevicornis, Lamarck. Obtained also at Fiji.

Goniastrea laxa, n.sp. Two specimens; obtained at no other locality.

Cyphastraea aspera, n.sp. One specimen; obtained at no other locality.

Pavonia decussata, Dana. One specimen; obtained at no other locality by the Challenger.

Madrepora pocillifera, Lamarck. Obtained also at Tongatabu and Fiji.

„ *millepora* (Ehrenberg). One specimen; obtained at no other locality by the Challenger.

„ *minima*, n.sp. Two specimens; obtained at no other locality.

Montipora grandifolia (Dana). Two fragments; obtained at no other locality by the Challenger.

Porites parvistellata, n.sp. Two specimens; obtained at no other locality.

„ *tenuis*, Verrill. Obtained also at Sandwich Islands.

HYDROIDA (Allman, Zool. pt. 70).

Lictorella cyathifera, n.g., n.sp. (63 to 130 fathoms); obtained at no other locality.

Apl.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha undata, n.sp. Obtained at no other locality. [Recorded in error from Station 176, 1450 fathoms].

Ophiothrix purpurea, Martens (?). (63 fathoms); obtained also at Banda.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Synapta beselii, Jæger. A few specimens (130 fathoms); obtained also at Amboina, Philippines, and Tahiti. Recorded from Indian and Pacific Oceans.

Holothuria atra, Jæger. One specimen (130 fathoms); obtained also at Fiji and Amboina.

MACRURA (Spence Bate, Zool. pt. 52).

Penæus gracilis, Dana. (Surface?); obtained also at Port Jackson.

Hemipenæus tomentosus, n.g., n.sp. One specimen (130 fathoms); obtained also at Station 200, 250 fathoms.

Sergestes ancylops, Krøyer. One specimen (surface?); obtained also in North Pacific. Recorded from Greenland.

Lucifer reynaudii, M.-Edwards. (Surface?); a widely-distributed species.

Nematocarcinus productus, n.sp. One specimen; obtained also at Stations 195, 205, and 237, 1050 to 1875 fathoms. [Recorded in error from Station 176, 1450 fathoms].

Oodeopus armatus, n.g., n.sp. (Surface?); obtained also at Cape York.

„ *duplex*, n.g., n.sp. (Surface?); obtained also at Fiji and Cape York.

ANOMURA (Henderson, Zool. pt. 69).

Canobita rugosa, M.-Edwards. (Shore); obtained also at Fiji, Arrou, Admiralty, and Tahiti Islands.

„ *perlata*, M.-Edwards. One specimen (shore); obtained also at Fiji.

BRACHYURA (Miers, Zool. pt. 49).

Epigrapsus politus, Heller. One specimen; obtained at no other locality by the Challenger. Recorded from Nicobars and Polynesian Islands.

Sesarma (Holometopus) aubryi, M.-Edwards. Many specimens (shallow water); obtained also at Arrou and Admiralty Islands.

GASTEROPODA (Watson, Zool. pt. 42).

Natica (Neverita) albumen (Linné). (Shore); obtained at no other locality by the Challenger. Recorded from Philippines.

POLYZOA (Busk, Zool. pts. 30 and 50).

APL.

Salicornaria malvinensis, Busk. For distribution see Station 145. [Recorded in error from Station 176, 1450 fathoms].

Retepora margaritacea, n.sp. Obtained at no other locality. [Recorded in error from Station 176, 1450 fathoms].

Crisia elongata, M.-Edwards. Obtained at no other locality by the Challenger. [Recorded in error from Station 176, 1450 fathoms].

FISHES (Günther, Zool. pt. 6).

Gobius genivittatus, C.V. (Fresh water).

Sicydium sp. (?), fry. (Fresh water).

Two small fishes are recorded also from the dredgings.

In the foregoing list 48 species are enumerated, of which 24 are new to science, including representatives of 8 new genera; 19 of the new species and 3 new genera were not obtained elsewhere.

Station 178 (Sounding 308), Fiji to Raine Island (see Chart 27 and Diagram 13).

STATION 178.

August 19, 1874; lat. 16° 47' S., long. 165° 20' E.

Temperature of air at noon, 76°·8; mean for the day, 76°·5.

Temperature of water :—

Surface, ...	79·0	600 fathoms, ...	38·5
50 fathoms, ...	76·0	700 „	38·0
100 „	71·5	800 „	37·4
150 „	65·0	900 „	36·8
200 „	57·0	1000 „	36·3
250 „	51·5	1100 „	35·8
300 „	47·5	1300 „	35·8
400 „	42·3	1500 „	35·8
500 „	40·0	Bottom, ...	35·8

Density at 60° F.:—

Surface, ...	1·02621	100 fathoms, ...	1·02673
50 fathoms, ...	1·02625	200 „	1·02636

Depth, 2650 fathoms; deposit, Red Clay.

STATION 178.

At 1 P.M. got up steam. At 1.15 P.M. shortened and furled sails, proceeded under steam, and sounded in 2650 fathoms. Took serial temperatures down to 1500 fathoms. At 4.30 P.M. completed observations, and at 5 P.M. made sail.

Raine Island distant at noon, 1286 miles. Made good 149 miles. Amount of current 2 miles, direction S. 64° W.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—Several tow-nets were lost or torn; the following were, however, observed:—*Peridinium*, many *Globigerina*, *Sagitta*, many Crustaceans, Pteropods and Pteropod larvæ, *Salpæ*. The stomach of a *Salpa* contained many Rhabdospheres, a few Coccospheres, many Acanthometræ, and one or two *Coscinodisci*. The screw was taken up and found to be covered with *Sertularia*, *Tubularia*, and barnacles.

STATION 179.

Station 179 (Sounding 309), Fiji to Raine Island (see Chart 27 and Diagram 13).

August 21, 1874; lat. 15° 58' S., long. 160° 48' E.

Temperature of air at noon, 78°·8; mean for the day, 77°·3.

Temperature of water:—

Surface, ...	79°·0	900 fathoms, ...	37°·7
100 fathoms, ...	71·1	1000 „	36·8
200 „	55·5	1100 „	36·4
300 „	45·2	1200 „	36·0
400 „	41·6	1300 „	36·0
500 „	40·0	1400 „	36·0
600 „	38·9	1500 „	36·0
700 „	38·3	Bottom, ...	36·0
800 „	37·7		

Density at 60° F.:—

Surface, ...	1·02634	300 fathoms, ...	1·02614
100 fathoms, ...	1·02667	400 „	1·02591
200 „	1·02619	Bottom, ...	1·02594

Depth, 2325 fathoms; deposit, Globigerina Ooze, containing 32·29 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.). °

At 10 A.M. got up steam. At 11.30 A.M. shortened and furled sails. At noon proceeded under steam, and at 1 P.M. sounded in 2325 fathoms. Obtained serial temperatures down to 1500 fathoms, also specimens of water for analysis. The carbonic acid was determined in water from 200 fathoms, and amounted to 44·4 milligrammes per litre. At 3 P.M. completed observations, and at 3.20 P.M. made all plain sail.

Raine Island distant at noon, 1012 miles. Made good 133 miles. Amount of current 10 miles, direction N. 84° E. STATION 179.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed during the examination of the deposit from this Station; the pelagic species, which make up about 84 per cent. of the carbonate of lime present in the deposit, are marked thus ×:—

ORGANISMS FROM
THE DEPOSIT.

<i>Biloculina depressa</i> , d'Orbigny.	<i>Lagena stelligera</i> , Brady (!).
„ „ var. <i>murrhyna</i> , Schwager.	„ <i>striata</i> (d'Orbigny).
<i>Miliolina seminulum</i> (Linné).	„ <i>striatopunctata</i> , Parker and Jones.
„ <i>venusta</i> (Karrer).	„ <i>sulcata</i> (Walker and Jacob).
<i>Hyperammina vagans</i> , Brady.	„ <i>truncata</i> , Brady.
<i>Reophax nodulosa</i> , Brady.	<i>Nodosaria communis</i> , d'Orbigny.
<i>Haplophragmium latidorsatum</i> (Bornemann).	<i>Cristellaria acutauricularis</i> (Fichtel and Moll).
<i>Ammodiscus gordialis</i> (Jones and Parker).	<i>Polymorphina angusta</i> , Egger.
„ <i>incertus</i> (d'Orbigny).	<i>Uvigerina asperula</i> , Cjzek.
<i>Trochammina galeata</i> , Brady.	× <i>Globigerina æquilateralis</i> , Brady.
<i>Textularia agglutinans</i> , d'Orbigny.	× „ <i>conglobata</i> , Brady.
<i>Verneuilina pygmæa</i> (Egger).	× „ <i>digitata</i> , Brady.
<i>Gaudryina pupoides</i> , d'Orbigny.	× „ <i>dubia</i> , Egger.
<i>Cassidulina crassa</i> , d'Orbigny.	× „ <i>inflata</i> , d'Orbigny.
„ <i>subglobosa</i> , Brady.	× „ <i>sacculifera</i> , Brady.
<i>Ehrenbergina hystrix</i> , Brady.	× <i>Orbulina universa</i> , d'Orbigny.
„ <i>serrata</i> , Reuss.	× <i>Hastigerina pelagica</i> (d'Orbigny).
<i>Lagena apiculata</i> , Reuss.	× <i>Pullenia obliquiloculata</i> , Parker and Jones.
„ <i>auriculata</i> , Brady.	„ <i>quinqueloba</i> , Reuss.
„ <i>crenata</i> , Parker and Jones.	„ <i>sphæroides</i> (d'Orbigny).
„ <i>desmophora</i> , Rymer Jones.	× <i>Sphæroidina dehiscens</i> , Parker and Jones.
„ <i>exsculpta</i> , Brady.	<i>Truncatulina pygmæa</i> , Hantken.
„ <i>favoso-punctata</i> , Brady.	„ <i>wuellerstorfi</i> (Schwager).
„ <i>formosa</i> , Schwager.	× <i>Pulvinulina crassa</i> (d'Orbigny).
„ <i>globosa</i> (Montagu).	„ <i>exigua</i> , Brady.
„ <i>gracilis</i> , Williamson.	„ <i>favus</i> , Brady.
„ <i>gracillima</i> (Seguenza).	× „ <i>menardii</i> (d'Orbigny).
„ <i>lævis</i> (Montagu).	× „ <i>miceliniana</i> (d'Orbigny).
„ <i>longispina</i> , Brady.	× „ <i>patagonica</i> (d'Orbigny).
„ <i>marginata</i> (Walker and Boys).	× „ <i>tumida</i> , Brady.
„ <i>orbignyana</i> (Seguenza).	„ <i>umbonata</i> , Reuss.
„ <i>quadriscopulata</i> , Reuss (!).	<i>Rotalia soldanii</i> , Reuss.
„ <i>seminuda</i> , Brady.	<i>Nonionina pompilioides</i> (Fichtel and Moll).
„ <i>semistriata</i> , Williamson.	„ <i>umbilicatula</i> (Montagu).
„ <i>staphyllearia</i> , Schwager.	

Surface Organisms.—The following were taken in the tow-nets at the surface and down to 40 fathoms:—*Peridinium*, *Pyrocystis*, Diatoms, *Globigerina*, *Orbulina*, *Pulvinulina*, *Acanthometra*, Medusæ, *Diphyes* and allied forms, *Sagitta*, *Alciopa*, larval Aphroditaceans, *Saphirina* and other Copepods, and other Crustaceans, larval

ORGANISMS FROM
SURFACE-NETS.

STATION 179

Lamellibranch and other shells, Heteropoda (*Atlanta*), *Appendicularia*. One thick-shelled *Orbulina* was quite filled with sarcode of a yellowish colour, in which were many greenish and reddish coloured cells, like the yellow bodies in Radiolaria. The sarcode of the *Globigerina* had, in addition to yellow granular matter, many cells of a greenish tinge, rounder and smaller than those in *Orbulina*, as well as many orange coloured oil-globules. The endochrome of *Pyrocystis* and *Ethmodiscus* had a yellowish or greenish tinge, and was very similar in both species.

August 22, 23, 1874.

On these dates stormy petrels and larger birds like puffins were seen, while boatswain birds hovered over the ship at a great height, and a flock of sea-birds about the size of terns were noticed at some distance from the ship. On the evening of August 22 a specimen of *Sula piscator* alighted on the cutter and was caught; in its stomach was found a specimen of *Ommastrephes oualaniensis* (see Hoyle, Zool. pt. 44).

Surface Organisms.—The following species are recorded from the surface on August 23 :—

AMPHIPODA (Stebbing, Zool. pt. 67).^o

Scinã cornigera (M.-Edwards).

MACRURA (Spence Bate, Zool. pt. 52).

Sergestes rinki, Krøyer.

Oodeopus serratus, n.g., n.sp.

STATION 180

Station 180 (Sounding 310), Fiji to Raine Island (see Chart 27 and Diagram 13).

August 24, 1874; lat. 14° 7' S., long. 153° 43' E.

Temperature of air at noon, 77°·8; mean for the day, 76°·6.

Temperature of water :—

Surface, ...	80·0	600 fathoms, ...	38·8
50 fathoms, ...	75·4	700 "	38·3
100 "	72·8	800 "	37·8
150 "	61·8	900 "	37·3
200 "	53·5	1000 "	36·8
250 "	48·5	1100 "	36·4
300 "	45·5	1200 "	36·0
350 "	43·2	1300 "	36·0
400 "	41·5	1400 "	36·0
450 "	40·5	1500 "	36·0
500 "	39·6	Bottom, ...	36·0

Density at 60° F. :—

STATION 180.

Surface, ...	1·02611	300 fathoms, ...	1·02603
100 fathoms, ...	1·02676	400 „	1·02630
200 „	1·02603	Bottom, ...	1·02601

Depth, 2450 fathoms; deposit, Red Clay, containing about 1 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6 A.M. shortened and furled sails and got up steam. At 7 A.M. sounded in 2450 fathoms. At 8 A.M. obtained serial temperatures down to 1500 fathoms. At 10 A.M. completed observations, and at 10.20 A.M. made all plain sail. The carbonic acid was determined in bottom water, and amounted to 43·4 milligrammes per litre.

Raine Island distant at noon, 579 miles. Made good 138 miles. Amount of current 7 miles, direction N. 44° W.

Surface Organisms—The following were taken in the tow-nets sent down to about 20 fathoms :—*Pyrocystis*, *Globigerina*, *Orbulina*, *Pullenia*, *Pulvinulina menardii*, *Acanthometra*, many forms of Siphonophoræ, Echinoderm larvæ, *Sagitta*, *Alciopa* and other Annelids, Aphroditacean larvæ, larvæ of *Balanoglossus*, *Cypridina*, *Saphirina*, many Crustaceans and larvæ, larval Lamellibranchs, *Atlanta*, Pteropods and larvæ, small blue *Salpæ*, *Appendicularia*. The sarcode in *Pullenia* was bright red, sometimes surrounding the shell, and in one case a *Coscinodiscus* was noticed in it.

ORGANISMS FROM
SURFACE-NETS.

Station 181 (Sounding 311), Fiji to Raine Island (see Chart 27 and Diagram 13). STATION 181.

August 25, 1874; lat. 13° 50' S., long. 151° 49' E.

Temperature of air at noon, 78°·3; mean for the day, 77°·2.

Temperature of water at surface, 80°·0; bottom, 35°·8.

Density at 60° F. at surface, 1·02649; bottom, 1·02591.

Depth, 2440 fathoms; deposit, Red Clay, consisting of two layers, the upper containing 6·42 and the lower 32·28 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 11 A.M. got up steam. At 11.30 A.M. shortened and furled sails and proceeded under steam to sound and trawl. At 1 P.M. put trawl over, and veered 3000 fathoms. At 2 P.M. sounded in 2440 fathoms. The carbonic acid was determined in water from the surface, and amounted to 35·6 milligrammes per litre. At 5 P.M. commenced heaving in trawl, which came up at 7.45 P.M. with a few specimens and some pumice-stones.

STATION 181.

At 8 P.M. made sail. Stormy petrels, boatswain birds, gannets, and a large flock of birds, probably terns, were observed.

Raine Island distant at noon, 480 miles. Made good 99 miles. Amount of current 18 miles, direction S. 74° W.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

PENNATULIDA (Kölliker, Zool. pt. 2).

Umbellula leptocaulis, n.sp. Two specimens ; obtained at no other locality.

ANTIPATHARIA (Brook, Zool. pt. 80).

Bathypathes lyra, n.g., n.sp. One specimen ; obtained also at Station 246, 2050 fathoms.

CORALS (Moseley, Zool. pt. 7).

Bathyactis symmetrica (Pourtales). For distribution see Station 24.

SIPHONOPHORÆ (Haeckel, Zool. pt. 77).

Disconalia gastroblasta, n.g., n.sp. Obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Freyella remex, n.sp. Obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Benthescymus brasiliensis, n.g., n.sp. One specimen ; obtained also at Stations 168, 173, 184, 285, and 323.

Acantheephyra sica, n.sp. One specimen ; obtained also at Stations 40, 159, 168, 169, 170, 194, 230, 235, and 318.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Cirroteuthis pacifica, n.sp. One specimen ; obtained at no other locality.

FISHES (Günther, Zool. pt. 57).

Typhlonus nasus, n.g., n.sp. One specimen ; obtained also at Station 198, 2150 fathoms. Only species of the genus.

Pachystomias microdon, n.g., n.sp. One specimen ; obtained at no other locality. Only species of the genus.

The Station-book records also : *Hyalonema* spicules and a Polyp (?) on pumice-stone.

Excluding Protozoa, about 20 specimens of invertebrates and fishes were obtained at this Station, belonging to about 12 species, of which 9 are new to science, including representatives of 5 new genera; 5 of the new species and 1 new genus were not obtained elsewhere. STATION 181.

The specimen of *Pachystomias microdon* had one club-shaped spot of a rose colour directly below the eye, another a little above and in front of the eye, the latter about half the size of the former; these spots became yellow in spirit. The two rows of phosphorescent dots on the body were red with a circle of very pale violet; these became white in spirit. No trace of an eye could be observed in *Typhlonus*, but a dark spot was to be seen far beneath the skin behind the nostrils; the body of the fish was white, the fins black; all the scales were off, with the exception of one or two, which were of a dark colour.

Surface Organisms.—The following species are recorded from the surface in this locality (August 25, 26):— ORGANISMS FROM SURFACE-NETS.

OSTRACODA (Brady, Zool. pt. 3).

Halocypris atlantica, Lubbock.
 „ *brevirostris*, Dana.

COPEPODA (Brady, Zool. pt. 23).

Calanus gracilis, Dana.
Eucalanus attenuatus (Dana).
Pleuromma abdominale (Lubbock).
Undina darwinii, Lubbock.
 „ *vulgaris*, Dana.
Scolecithrix danæ (Lubbock).
Temora dubia (Lubbock).
Euchæta prestandrea, Philippi.
 „ *hessei*, n.sp.
 „ *australis*, n.sp.
Candace truncata, Dana.
 „ *pectinata*, Brady.
Setella gracilis, Dana.
Pontella acutifrons (Dana).
 „ *plumata* (Dana).
Corycæus varius, Dana.
 „ *venustus*, Dana.

Copilia mirabilis, Dana.

Oncaea obtusa, Dana.

Saphirina ovalis, Dana.

„ *inæqualis*, Dana.

„ *serrata*, n.sp.

AMPHIPODA (Stebbing, Zool. pt. 67).

Paraphronima cuivis, n.sp.
Phronima megalodous, n.sp.
Phorcorrhapthis sp. (?)

SCHIZOPODA (Sars, Zool. pt. 37).

Ceratolepis hamata, n.g., n.sp.¹
Euphausia pellucida, Dana.
 „ *gracilis*, Dana.
Thysanopoda tricuspidata, M.-
 Edwards.

PTEROPODA (Pelseneer, Zool. pt. 65).

Limacina inflata (d'Orbigny).
 „ *bulimoides* (d'Orbigny).
Clio (Creseis) virgula (Rang).

¹ Sars is doubtful whether this specimen came from the surface; it is more like a deep-sea species.

STATION 181

<i>Clio</i> (<i>Crescis</i>) <i>acicula</i> (Rang).	<i>Cleodora compressa</i> , Souleyet (= young of <i>Cavolinia trispinosa</i>).
„ (<i>Hyalocylix</i>) <i>striata</i> (Rang).	
„ (<i>Styliola</i>) <i>subula</i> , Quoy and Gaimard.	TUNICATA (Herdman, Zool. pt. 76).
„ <i>chaptali</i> (Souleyet).	<i>Salpa cordiformis-zonaria</i> , Quoy and Gaimard—Pallas.
<i>Cuvierina columnella</i> (Rang).	„ <i>cylindrica</i> , Cuvier.
<i>Cavolinia trispinosa</i> (Lesueur).	„ <i>runcinata-fusiformis</i> , Chamisso—Cuvier.
„ <i>quadridentata</i> (Lesueur).	<i>Appendicularia</i> sp. (?).
„ <i>longirostris</i> (Lesueur).	
„ <i>inflexa</i> (Lesueur).	

In addition, the following are recorded in the note-books:—*Pyrocystis*, *Peridinium* in chains, Oscillatoriaceæ, Foraminifera (*Globigerina* in prodigious numbers, and *Orbulina*), *Acanthometra* and other Radiolaria, small Actinian (*Nautactis*), *Diphyes* and other Siphonophoræ, *Sagitta*, Annelid larvæ (Aphroditacean), *Cyllopus*, *Oxycephalus*, *Rhabdosoma*, *Hyperia*, Squillid larvæ, *Sergestes*, *Lucifer*, *Phyllosoma*, young Caridids, Zoææ, Megalopæ, larval Lamellibranchs, *Atlanta*, *Pterotrachea*, *Macgillivraya*, *Theceurybia* [= *Halopsyche*] *gaudichaudi* with larvæ, small Cephalopod and cuttlefish eggs in strings, *Pyrosoma*, young fishes (Pleuronectids, Leptocephalids, and Scopelids). The otter trawl was towed for some time from the lower boom; it was never far beneath the surface, and when hauled in was found to contain a mass of jelly-like matter with strings of red spots, which turned out to be the eggs of a Cephalopod. Several sharks were seen, and one was caught, apparently belonging to the same species as those taken on July 14 and August 3 (*Carcharias lamia*).

Willenoes-Suhm writes: "On the surface the animals were as plentiful as we found them north and south of the equator in the Atlantic. *Halobates* and *Phyllirhoë* have not been observed, whereas the transparent Pleuronectidæ have made their appearance, of which, besides the common form, there is another distinguished by a long filament on the forehead and a more elongated body, the specimens of which were perfectly symmetrical. In the Pacific we found the Heteropod *Calcarella* and some Pteropods not taken in the Atlantic. Of the latter I may mention the curious form taken between Sydney and Wellington (*Pelagia alba*?) [= *Taonius suhmi*], *Theceurybia* [= *Halopsyche*] *gaudichaudi*, and a small Cymbulid, which has been very common since leaving the Kermadec Islands; I think we have also got its larvæ. There were also larvæ of a *Pneumodermopsis* (?) [= *Dexiobranchæa*] with peculiar cutaneous organs, which in some may correspond with the organs described by Gegenbaur in *Pneumodermos* [= *Dexiobranchæa*] *ciliatum*. *Macgillivraya* has also made its appearance, and will henceforth probably be very common. *Tomopteris* was absent or very rare. *Alciopa* was always present, and also young Terebellids, which sometimes floated about with a gelatinous

tube, and certain larvæ which were perhaps to be referred to Aphroditaceans. Moseley found a larva which he considered to be *Tornaria*, the larva of *Balanoglossus*. Crustacea have been very abundant, especially Stomatopod and Decapod larvæ, as well as *Lucifer*, *Sergestes*, nearly all the Hyperidæ, *Saphirina*, *Corycæus*, and *Copilia*. The Euphausidæ tended to disappear as we advanced into warmer water; they were still common off Kandavu, but are now very scarce."

Station 182 (Sounding 312), Fiji to Raine Island (see Chart 27 and Diagram 13). STATION 182.

August 27, 1874; lat. 13° 6' S., long. 148° 37' E.

Temperature of air at noon, 77°·8; mean for the day, 76°·9.

Temperature of water :—

Surface, ...	78°5	400 fathoms, ...	41°0
25 fathoms, ...	77°0	500 "	39°3
50 "	74°0	600 "	38°3
75 "	71°0	700 "	37°9
100 "	67°5	800 "	37°4
125 "	64°0	900 "	37°0
150 "	60°4	1100 "	36°3
175 "	56°0	1300 "	35°8
200 "	52°0	1500 "	35°8
250 "	47°0	Bottom, ...	35°8
300 "	44°0		

Density at 60° F. at surface, 1·02619; bottom, 1·02584.

Depth, 2275 fathoms; deposit, Globigerina Ooze, containing 49·90 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 2 P.M. got up steam. At 3.50 P.M. shortened and furled sails, and proceeded under steam to sound. At 4.30 P.M. sounded in 2275 fathoms. Obtained serial temperatures down to 1500 fathoms. At 6.40 P.M. made sail.

Raine Island distant at noon, 309 miles. Made good 111 miles. Amount of current 4 miles, direction N. 45° W.

Surface Organisms.—The tow-nets put out while sounding yielded the same results as during the past two days, *Globigerina*, *Orbulina*, and *Pyrocystis* being specially abundant. ORGANISMS FROM
SURFACE-NETS.

Station 183 (Sounding 313), Fiji to Raine Island (see Chart 27 and Diagram 13). STATION 183.

August 28, 1874; lat. 12° 42' S., long. 146° 46' E.

Temperature of air at noon, 79°·8; mean for the day, 77°·4.

STATION 183.

Temperature of water :—

Surface, ...	78·0	500 fathoms, ...	39·3
50 fathoms, ...	76·2	600 „	38·4
100 „	69·5	700 „	37·9
150 „	61·5	800 „	37·5
200 „	54·5	900 „	37·1
250 „	48·9	1100 „	36·3
300 „	45·0	1300 „	36·0
350 „	42·8	1500 „	36·0
400 „	41·2	Bottom, ...	36·0

Density at 60° F.:—

Surface, ...	1·02630	300 fathoms, ...	1·02580
100 fathoms, ...	1·02643	400 „	1·02596
200 „	1·02595	Bottom, ...	1·02594

Depth, 1700 fathoms ; deposit, Globigerina Ooze, containing 53·57 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 9 A.M. got up steam. At 11.15 A.M. shortened and furled sails, proceeded under steam, and at 12.30 P.M. sounded in 1700 fathoms. Obtained serial temperatures down to 1500 fathoms. The carbonic acid was determined in bottom water, and amounted to 60·9 milligrammes per litre. At 3 P.M. completed observations and made all plain sail. A large shark, apparently different from those taken lately, was hooked, but the line carried away. Many stormy petrels and boatswain birds were observed.

Raine Island distant at noon, 174 miles. Made good 136 miles. Amount of current 2 miles, direction W.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The tow-nets yielded the same things as on previous days.

STATION 184.

Station 184 (Sounding 314), Fiji to Raine Island (see Chart 27 and Diagram 13).

August 29, 1874 ; lat. 12° 8' S., long. 145° 10' E.

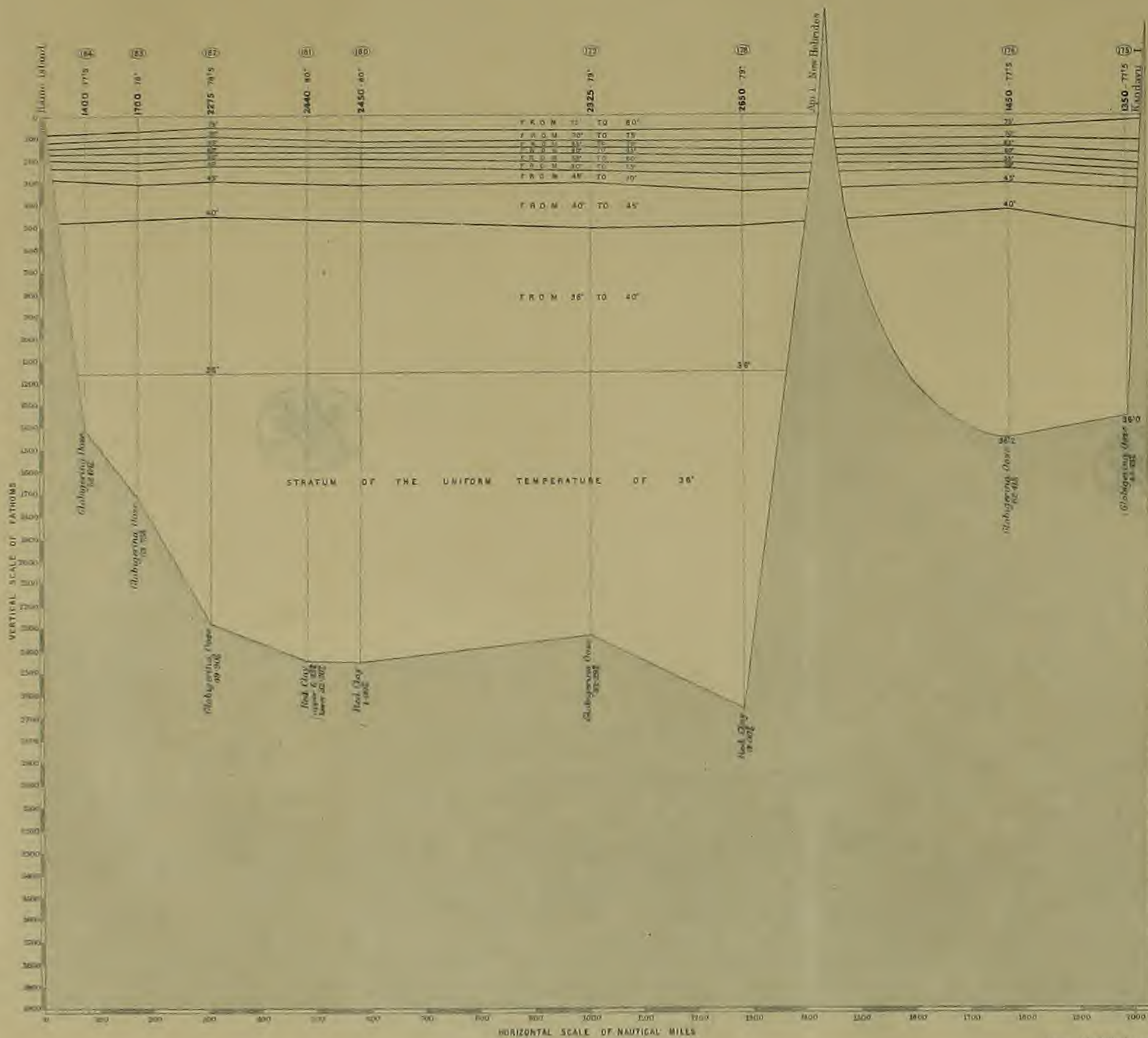
Temperature of air at noon, 78°·8 ; mean for the day, 77°·1.

Temperature of water :—

Surface, ...	77·5	225 fathoms, ...	51·0
50 fathoms, ...	76·6	250 „	48·0
75 „	74·3	300 „	44·3
100 „	70·8	350 „	42·1
125 „	66·8	400 „	41·0
150 „	62·5	500 „	39·7
175 „	58·2	Bottom, ...	36·0
200 „	54·2		

PACIFIC OCEAN Longitudinal Temperature Section . Fiji Islands to the Barrier reef, Australia .

For explanation of Symbols see Appendix 1



STATION 18



ORGANISMS
SURFACE-N:

STATION 18

Density at 60° F. at surface, 1·02630 ; bottom, 1·02613.

STATION 184.

Depth, 1400 fathoms ; deposit, Globigerina Ooze, containing 52·64 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 6 A.M. got up steam. At 6.30 A.M. shortened and furled sails, and proceeded under steam to sound and trawl. At 7 A.M. sounded in 1400 fathoms, and put trawl over. Obtained serial temperatures down to 500 fathoms. The carbonic acid was determined in bottom water, and amounted to 36·1 milligrammes per litre. At 2.30 P.M. hove up trawl containing many specimens, along with pumice-stones and cocoa-nuts. At 7.10 P.M. brought ship to wind ; strong breeze from the S.E.

Raine Island distant at noon, 74 miles. Made good 100 miles. No current.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

ANIMALS FROM
TRAWL.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Trichostemma sarsii, n.sp. One specimen ; obtained also at Station 73.

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Hyalonema sp. (?). Fragments.

ASTEROIDEA (Sladen, Zool. pt. 51).

Freyella dimorpha, n.sp. Obtained at no other locality.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Asthenosoma gracile, n.sp. Obtained also at Stations 169, 200, and 219.

HOLOTHURIOIDEA (Théel, Zool. pt. 13).

Benthodytes papillifera, n.g., n.sp. Four specimens ; obtained also at Stations 271 and 300, 2425 and 1375 fathoms.

ANNELIDA (M'Intosh, Zool. pt. 34).

Latmonice producta, Grube, var. *willemoesi*, nov. Obtained also at Stations 70, 133, 146, and 169.

CIRRIPEDIA (Hoek, Zool. pt. 25).

Scalpellum truncatum, n.sp. One specimen ; obtained at no other locality.

„ *australicum*, n.sp. One specimen ; obtained at no other locality.

„ *dubium*, n.sp. One specimen ; obtained at no other locality.

STATION 184.

AMPHIPODA (Stebbing, Zool. pt. 67).

Onesimoides carinatus, n.g., n.sp. One specimen; obtained at no other locality.

Only species of the genus.

Amathillopsis australis, n.sp. One specimen; obtained at no other locality.

ISOPODA (Beddard, Zool. pt. 48).

Arcturus abyssicola, n.sp. (?). Two specimens; obtained also at Station 281, 2385 fathoms.

MACRURA (Spence Bate, Zool. pt. 52).

Penæus velutinus, Dana. Two specimens; obtained also at Stations 186, 187, 188, 190, and 233, 6 to 1400 fathoms. Recorded from Japan and Sandwich Islands.

„ *serratus*, n.sp. One specimen; obtained also at Station 173.

Aristeus armatus, n.sp. Three specimens; obtained also at Stations 133, 213, 237, 246, 276, and 323.

Benthescymus brasiliensis, n.g., n.sp. Four specimens; obtained also at Stations 168, 173, 181, 285, and 323.

„ *altus*, n.g., n.sp. One specimen; obtained also at Stations 133, 170, 171, 174, 205, 214, 232, and 235.

Pontophilus gracilis, n.sp. One specimen; obtained also at Stations 133, 168, and 198.

Tropiocaris tenuipes, n.g., n.sp. One specimen; obtained at no other locality. The only other species of the genus (*Tropiocaris planipes*) was taken at Station 230.

Hymenodora rostrata, n.sp. One specimen; obtained also at Station 205, 1050 fathoms, and at Station 245, in tow-net down to over 1700 fathoms.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Teredo sp. (?). One specimen (from 1400 fathoms?).

Arca (*Barbatia*) *corpulenta*, n.sp. Obtained also at Stations 194, 198, 216A, 271, and 300, 200 to 2425 fathoms.

Myrina coppingeri, n.sp. Obtained at no other locality.

Pecten murrayi, n.sp. Obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Basilissa superba, n.g., n.sp. Obtained at no other locality.

Fossarus cereus, n.sp. One specimen; obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

STATION 184.

Octopus sp. (?). (Fragments impossible to determine).

BRACHIOPODA (Davidson, Zool. pt. 1).

Terebratula wyvillii, n.sp. Obtained also at Stations 160, 244, 299, 302, and 317.

Discina atlantica, King. For distribution see Station 106.

FISHES (Günther, Zool. pt. 57).

Bathyonus compressus, n.g., n.sp. Two specimens; obtained also at Stations 107 and 205.

Porogadus gracilis, n.sp. One specimen; obtained at no other locality.

Aphyonius gelatinosus, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Alepocephalus niger, n.sp. One specimen; obtained at no other locality.

In addition to the foregoing, the following are recorded in the Station-book:—
Several specimens of *Stephanoscyphus*, *Actinia*, a rudiment of *Comatula*, *Archaster*, and several small Ophiurids.

Excluding Protozoa, nearly 100 specimens of invertebrates and fishes were obtained at this Station, belonging to about 38 species, of which 28 are new to science, including representatives of 7 new genera; 14 of the new species and 2 new genera were not obtained elsewhere.

Moseley writes: "The trawl brought up half a dozen large palm fruits, one with the albumen still present, fresh and white. The hollows of the fruits were occupied by a small bivalve (*Arca*) and a Gasteropod, and the husks were bored by the young of a *Teredo*-like bivalve. Outside they were covered with a *Stephanoscyphus*, and I saw a small Nematoid among the fibres. An Actinian was found attached to a thick *Hyalonema* spicule, with adapted linear base; transparent *Terebratulæ*, an *Argonauta* shell, and an Octopod were also in the net."

Surface Organisms.—The following species is recorded from the surface at this Station:—

ORGANISMS FROM
THE SURFACE.

FISHES (Günther, Zool. pt. 78).

Psenes cyanophrys, C.V.

A log of wood was picked up, and found to be covered with *Lepas*, in the stomachs of which were many Radiolarians, one or two small *Globigerinæ*, and parts of small Crustaceans.

STATION 184.

The following species are recorded from the surface between Api and Cape York, the exact locality not being noted :—

AMPHIPODA (Stebbing, Zool. pt. 67).

Paraphronima cuiris, n.sp.

Anchylomera sp. (?)

Oxycephalus porcellus, Claus.

MACRURA (Spence Bate, Zool. pt. 52).

Rhomaleocaris hamulus, n.g., n.sp.

Hectarthropus compressus, n.g., n.sp.

STATIONS 185
TO 185B.

Stations 185 to 185B (Soundings 315 to 317), off Raine Island (see Chart 27).

August 31, 1874.

Temperature of air at noon, 77°·8; mean for the day, 76°·8.

Temperature of water at surface, 77°·0.

Density at 60° F. at surface, 1·02639.

Depth, 135, 150, and 155 fathoms; deposit Coral Sand, containing 86·97 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.)

Passed Raine Island at 2 P.M. on August 30, and came to anchor at 3 P.M. to the leeward of a patch of reef about 5 miles from Raine Island. At 4 A.M. on August 31 got up steam. At 5.40 A.M. weighed anchor and proceeded under steam towards Raine Island. At 7.30 A.M. stopped off Raine Island. Captain, officers, and naturalists landed on the island. Proceeded to sound off the island. At 10 A.M. stopped under lee of the island and dredged in about 135 fathoms, but at 11.30 A.M. the dredge came up nearly empty. Proceeded towards the Great Detached Reef. At 12.20 P.M. stopped between Raine Island and the Great Detached Reef, and lowered the dredge in 155 fathoms. At 1 P.M. hove up dredge containing a large quantity of the deposit and a few specimens. At 1.30 P.M. made sail, and at 5.20 P.M. anchored in 21 fathoms, north of Ashmore Banks.

ANIMALS FROM
DREDGE.

The following species are recorded in the Zoological Reports from the dredge at these Stations off Raine Island, including one or two species collected on shore :—

OSTRACODA (Brady, Zool. pt. 3).

Bairdia amygdaloides, Brady. For distribution see Station 162.

„ *attenuata*, n.sp. Obtained also at Sandwich Islands, 40 fathoms.

„ *angulata*, Brady. Obtained also at Stations 75 and 305.

Cythere (?) *laganella*, n.sp. Obtained at no other locality.

„ *torresi*, n.sp. Single valve; obtained at no other locality.

„ *inconspicua*, n.sp. Obtained at no other locality.

- Cythere wyville-thomsoni*, n.sp. (?). Obtained also at Stations 149, 150, and 151. STATIONS 185
TO 185B.
- „ *scalaris*, n.sp. Obtained also at Station 305, 165 fathoms.
- „ *dasyderma*, n.sp. Widely distributed (see Station 5).
- Xestoleberis intermedia*, Brady (?). Obtained at no other locality by the Challenger.
- Cytheropteron* (?) *angustatum*, n.sp. Obtained also at Station 149.
- Bythocythere orientalis*, Brady, var. Obtained also at Hong Kong. Recorded from
Hong Kong.
- „ *arenacea*, n.sp. Obtained at no other locality.
- „ *velifera*, n.sp. Obtained at no other locality.
- Polycopse orbicularis*, Sars. For distribution see Station 142.
- „ (?) *favus*, n.sp. One or two valves; obtained at no other locality.
- Cytherella lata*, n.sp. Obtained also at Stations 24, 75, 120, and 191A.
- „ *truncata*, Brady. Obtained at no other locality by the Challenger.
Recorded from Colon-Aspinwall.
- „ *latimarginata*, n.sp. Obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

- Ocypoda ceratophthalma* (Pallas). One specimen (Raine Island); obtained also
at Fiji.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Næra fallax*, n.sp. Obtained at no other locality.
- Poromya australis*, n.sp. Obtained at no other locality.
- „ *lævis*, n.sp. Three valves; obtained at no other locality.
- Semele (Abra) regularis*, n.sp. Single valve; obtained at no other locality.
- Tellina murrayi*, n.sp. Obtained at no other locality.
- „ *diluta*, n.sp. Obtained at no other locality.
- Verticordia deshayesiana*, Fischer. Single valve; obtained also at Station 122.
- „ *australiensis*, n.sp. Obtained at no other locality.
- Lucina cristata*, n.sp. Obtained at no other locality.
- „ (*Codakia*) *congenita*, n.sp. Obtained at no other locality.
- Montacuta acuminata*, n.sp. Obtained at no other locality.
- Nucula torresi*, n.sp. Obtained at no other locality.
- Leda watsoni*, n.sp. Obtained at no other locality.
- „ *neæriiformis*, n.sp. Obtained at no other locality.
- Limopsis torresi*, n.sp. Obtained at no other locality.
- Amussium torresi*, n.sp. Obtained at no other locality.

SCAPHOPODA AND GASTEROPODA (Watson, Zool. pt. 42).

- Siphodentalium prionotum*, n.sp. Obtained at no other locality.

STATIONS 185
TO 185B.

Cadulus simillimus, n.sp. Obtained also at Station 187, 6 fathoms.

Trochus sp. (?).

Scissurella declinans, n.sp. Obtained at no other locality.

Schismope carinata, n.sp. Obtained also at Port Jackson.

Nassa (*Alectryon*) *psila*, n.sp. Obtained at no other locality.

Mitra (*Cancilla*) *interlirata*, Reeve. Obtained also at Tongatabu, Fiji, and Arrou Islands.

Marginella (*Glabella*) *pachia*, n.sp. Obtained at no other locality.

„ („) *valida*, n.sp. Obtained at no other locality.

„ („) *brachia*, n.sp. Obtained at no other locality.

„ („) *alta*, n.sp. Obtained at no other locality.

Pleurotoma sp. (?). (Belonging to the *Pleurotoma carinata* group).

Turritella deliciosa, n.sp. Obtained at no other locality.

Eulimella acerrima, n.sp. Obtained at no other locality.

„ *laxa*, n.sp. Obtained at no other locality.

Aelis minutissima, n.sp. One specimen; obtained at no other locality.

Eulima acerrima, n.sp. Obtained at no other locality.

„ *campyla*, n.sp. Obtained at no other locality.

„ *euryehades*, n.sp. Forty or fifty specimens; obtained at no other locality.

Bittium porcellanum, n.sp. Obtained at no other locality.

Rissoa (?) sp. Obtained also at Station 186, 8 fathoms.

Scaliola arenosa, Adams. Obtained also at Stations 186, 187, Torres Strait, and Sandwich Islands, 3 to 40 fathoms. Recorded from Japan.

„ *bella*, Adams. For distribution see Station 172.

Bulla sp. (?).

Utriculus (*Tornatina*) *leptekes*, n.sp. Obtained at no other locality.

Cylichna crispula, n.sp. Obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Spirula peronii, Lamarck. (Dead shells from the shore).

FISHES (Günther, Zool. pt. 6).

Glyphidodon septemfasciatus, C.V. (Raine Island).

„ *sordidus*, Forsk. (Raine Island).

In addition to the foregoing, the Station-book records a Hydrozoon and *Brissus*.

Excluding Protozoa, about 150 specimens of invertebrates and fishes were obtained in the vicinity of Raine Island, belonging to about 67 species, of which 47 are new to science; 39 of the new species were not obtained elsewhere.

The following species of Pteropoda and Foraminifera were observed in the deposit from this place (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.) :—

STATIONS 185
TO 185E.

PTEROPODA (Pelseneer, Zool. pt. 65).

Limacina inflata (d'Orbigny).
 „ *lesueurii* (d'Orbigny).
 „ *bulinoides* (d'Orbigny).
Clio (*Creseis*) *virgula* (Rang).
 „ („) *acicula* (Rang).
 „ (*Hyalocylix*) *striata* (Rang).
 „ (*Styliola*) *subula*, Quoy and Gaimard.
 „ *pyramidata*, Linné.

Cuvierina columnella (Rang).
Cavolinia trispinosa (Lesueur).
 „ *quadridentata* (Lesueur).
 „ *longirostris* (Lesueur).
 „ *gibbosa* (Rang).
 „ *uncinata* (Rang).
 „ *inflexa* (Lesueur).

FORAMINIFERA (Brady, Zool. pt. 22).—The pelagic species, which make up about 46 per cent. of the carbonate of lime present in the deposit, are marked thus ×.

Nubecularia divaricata, Brady.
 „ *tibia*, Jones and Parker.
Biloculina depressa, d'Orbigny.
 „ *ringens* (Lamarck).
 „ *sphæra*, d'Orbigny.
Spiroloculina acutimargo, Brady.
 „ *arenaria*, Brady.
 „ *convexiuscula*, Brady.
 „ *crenata*, Karrer.
 „ *excavata*, d'Orbigny.
 „ *grata*, Terquem.
 „ *limbata*, d'Orbigny.
 „ *tenuis* (Czjzek).

Miliolina agglutinans (d'Orbigny).
 „ *circularis* (Bornemann).
 „ *ferussacii* (d'Orbigny).
 „ *linxæana* (d'Orbigny).
 „ *oblonga* (Montagu).
 „ *reticulata* (d'Orbigny).
 „ *seminulum* (Linné).
 „ *separans*, Brady.
 „ *subrotunda* (Montagu).
 „ *transversestriata*, Brady.
 „ *tricarinata* (d'Orbigny).
 „ *triquetra*, Brady.

Articulina conico-articulata (Eatsch).
 „ *lineata*, Brady.
 „ *sulcata*, Reuss.

Vertebralina insignis, Brady.
Ophthalmidium inconstans, Brady.
Hauerina compressa, d'Orbigny.
 „ *ornatissima* (Karrer).

Planispirina exigua, Brady.
Cornuspira carinata (Costa).
 „ *foliacea* (Philippi).
 „ *invovens*, Reuss.
 „ *lacunosa*, Brady.
Peneroplis pertusus, Forskål.
Orbitolites complanata, Lamarck.
 „ *marginalis* (Lamarck).
Alveolina loscii, DeFrance.
Reophax scorpiurus, Montfort.
Textularia agglutinans, d'Orbigny.
 „ „ var. *porrecta*, Brady.
 „ *concava* (Karrer).
 „ *conica*, d'Orbigny.
 „ *crispata*, Brady.
 „ *folium*, Parker and Jones.
 „ *gramen*, d'Orbigny.
 „ *jugosa*, Brady.
 „ *sagittula*, DeFrance.
 „ „ var. *fistulosa*, Brady.
 „ *transversaria*, Brady.
 „ *trochus*, d'Orbigny.

Verneuilina spinulosa, Reuss.
Tritaxia indiscreta, Brady.
 „ *tricarinata*, Reuss.
Chrysalidina dimorpha, Brady.
Paxonina flabelliformis, d'Orbigny.
Spiroplecta americana, Ehrenberg.
 „ *annectens* (Parker and Jones).
Gaudryina rugosa, d'Orbigny.
 „ *subrotundata*, Schwager.
Valvulina conica, Parker and Jones.

STATIONS 185
TO 185B.

Clavulina angularis, d'Orbigny.
 „ *cylindrica*, Hantken.
 „ *parisiensis*, d'Orbigny.
Bulimina aculeata, d'Orbigny.
 „ *convoluta*, Williamson.
 „ *elegantissima*, d'Orbigny.
 „ *inflata*, Seguenza.
 „ *marginata*, d'Orbigny.
 „ *pyrula*, d'Orbigny.
 „ *subcylindrica*, Brady.
 „ *subteres*, Brady.
 „ *williamsoniana*, Brady.
Virgulina schreibersiana, Czjzek.
Bolivina anariensis (Costa).
 „ *amygdaliformis*, Brady.
 „ *beyrichi*, Reuss, var. *alata*, Seguenza.
 „ *costata*, d'Orbigny.
 „ *limbata*, Brady.
 „ *lobata*, Brady.
 „ „ var. *strigosa*, Brady.
 „ *nitida*, Brady.
 „ *porrecta*, Brady.
 „ *punctata*, d'Orbigny.
 „ *reticulata*, Hantken.
 „ *robusta*, Brady.
 „ *schwageriana*, Brady.
 „ *subangularis*, Brady.
Cassidulina bradyi, Norman.
 „ *calabra* (Seguenza).
 „ *crassa*, d'Orbigny.
 „ *lavigata*, d'Orbigny.
 „ *subglobosa*, Brady.
Ehrenbergina serrata, Reuss.
Lagena anpulla-distoma, Rymer Jones.
 „ *aspera*, Reuss.
 „ *castrensis*, Schwager.
 „ *dentata* (Seguenza).
 „ *elongata* (Ehrenberg).
 „ *favoso-punctata*, Brady.
 „ *formosa*, Schwager, var. *brevis*, Brady.
 „ *gothica*, Rymer Jones.
 „ *gracillima* (Seguenza).
 „ *hertwigiana*, Brady.
 „ *hispidula*, Reuss.
 „ *lavigata* (Reuss).
 „ *lavis* (Montagu).
 „ *marginata* (Walker and Boys).
 „ *orbignyana* (Seguenza).
 „ *quadrangularis*, Brady.
 „ *radiato-marginata*, Parker and Jones.

Lagena schulzeana, Brady.
 „ *semistriata*, Williamson.
 „ *spiralis*, Brady.
 „ *striata* (d'Orbigny).
 „ *striatopunctata*, Parker and Jones.
 „ *sulcata* (Walker and Jacob).
 „ *trigono-marginata*, Parker and Jones.
Nodosaria catenulata, Brady.
 „ *communis*, d'Orbigny.
 „ *consobrina*, d'Orbigny, var. *emaciata*,
 Reuss.
 „ *hispidula*, d'Orbigny.
 „ *inflexa*, Reuss.
 „ *obliqua* (Linné).
 „ *plebeia* (Reuss).
 „ *proxima*, Silvestri.
 „ *pyrula*, d'Orbigny.
 „ *radicula* (Linné).
 „ *raphanus* (Linné).
 „ *roemeri* (Neugeboren).
 „ *scalaris* (Batsch).
 „ *soluta*, Reuss.
 „ *vertebralis* (Batsch).
Frondicularia archiaciana, d'Orbigny.
 „ *inaequalis*, Costa.
 „ *milleltii*, Brady.
 „ *spatulata*, Brady.
Rhabdogonium tricarinatum (d'Orbigny).
Marginulina glabra, d'Orbigny.
Vaginulina bruckenthali, Neugeboren.
 „ *patens*, Brady.
Cristellaria acutauricularis (Fichtel and Moll).
 „ *costata* (Fichtel and Moll).
 „ *cultrata* (Montfort).
 „ *gemmata*, Brady.
 „ *italica* (Defrance).
 „ *latifrons*, Brady.
 „ *obtusata*, Reuss.
 „ *rotulata* (Lamarek).
 „ *schloenbachii*, Reuss.
 „ *tenuis* (Bornemann).
 „ *tricarinella*, Reuss.
 „ *variabilis*, Reuss.
 „ *vortex* (Fichtel and Moll).
 „ *wetherellii* (Jones).
Amphicoryne falx (Jones and Parker).
Polymorphina amygdaloides, Reuss.
 „ *angusta*, Egger.
 „ *communis*, d'Orbigny.
 „ *compressa*, d'Orbigny.

<i>Polymorphina elegantissima</i> , Parker and Jones.	<i>Discorbina patelliformis</i> , Brady.	STATIONS 185 TO 185B.
„ <i>lanceolata</i> , Reuss.	„ <i>rarefens</i> , Brady.	
„ <i>oblonga</i> , d'Orbigny.	„ <i>rosacea</i> (d'Orbigny).	
„ <i>problema</i> , d'Orbigny.	„ <i>rugosa</i> (d'Orbigny).	
„ <i>regina</i> , Brady, Parker, and Jones.	„ <i>ventricosa</i> , Brady.	
<i>Uvigerina asperula</i> , Czjzek.	„ <i>vesicularis</i> (Lamarck).	
„ <i>canariensis</i> , d'Orbigny.	<i>Planorbulina larvata</i> , Parker and Jones.	
„ <i>interrupta</i> , Brady.	<i>Truncatulina echinata</i> , Brady.	
„ <i>porrecta</i> , Brady.	„ <i>haidingerii</i> (d'Orbigny).	
„ <i>pygmæa</i> , d'Orbigny.	„ <i>humilis</i> , Brady.	
„ <i>schwageri</i> , Brady.	„ <i>præincta</i> (Karrer).	
„ <i>tenuistriata</i> , Reuss.	„ <i>reticulata</i> (Czjzek).	
<i>Sagrina columellaris</i> , Brady	„ <i>tenuimargo</i> , Brady.	
„ <i>limbata</i> , Brady.	„ <i>ungeriana</i> (d'Orbigny).	
„ <i>raphanus</i> , Parker and Jones.	„ <i>variabilis</i> , d'Orbigny.	
„ <i>tessellata</i> , Brady.	„ <i>wuellerstorfi</i> (Schwager).	
<i>Ramulina globulifera</i> , Brady.	<i>Anomalina ariminensis</i> (d'Orbigny).	
× <i>Globigerina bulloides</i> , d'Orbigny.	<i>Carpenteria monticularis</i> , Carter.	
× „ <i>conglobata</i> , Brady.	„ <i>proteiformis</i> , Goës.	
× „ <i>dubia</i> , Egger.	<i>Pulvinulina concentrica</i> , Parker and Jones.	
× „ <i>sacculifera</i> , Brady.	„ <i>lauerii</i> (d'Orbigny).	
× <i>Orbulina universa</i> , d'Orbigny.	× „ <i>menardii</i> (d'Orbigny).	
× <i>Pullenia obliquiloculata</i> , Parker and Jones.	× „ „ var. <i>fimbriata</i> , Brady.	
„ <i>sphæroides</i> (d'Orbigny).	× „ <i>melchioriana</i> (d'Orbigny).	
<i>Sphæroidina bulloides</i> , d'Orbigny.	„ <i>oblonga</i> (Williamson).	
× „ <i>deliscens</i> , Parker and Jones.	„ „ var. <i>scabra</i> , Brady.	
× <i>Candeina nitida</i> , d'Orbigny.	„ <i>procera</i> , Brady.	
<i>Spirillina decorata</i> , Brady.	„ <i>schreibersii</i> (d'Orbigny).	
„ <i>inæqualis</i> , Brady.	× „ <i>tumida</i> , Brady.	
„ <i>limbata</i> , Brady, var. <i>denticulata</i> , Brady.	<i>Calcarina hispida</i> , Brady.	
„ <i>vivipara</i> , Ehrenberg.	„ <i>spengleri</i> , Linné.	
<i>Patellina campanæformis</i> , Brady.	<i>Tinoporus baculatus</i> (Montfort ?), Carpenter.	
„ <i>corrugata</i> , Williamson.	<i>Gypsina vesicularis</i> (Parker and Jones).	
× <i>Cymbalopora (Tretomphalus) bulloides</i> (d'Orbigny).	<i>Nonionina asterizans</i> (Fichtel and Moll).	
„ <i>poeyi</i> (d'Orbigny).	„ <i>scapha</i> (Fichtel and Moll).	
„ <i>tabellæformis</i> , Brady.	„ <i>umbilicatula</i> (Montagu).	
<i>Discorbina allomorphinoides</i> (Reuss).	<i>Polystomella crispa</i> (Linné).	
„ <i>biconcava</i> , Parker and Jones.	„ <i>macella</i> (Fichtel and Moll).	
„ <i>elegans</i> (d'Orbigny).	<i>Amphistegina lessonii</i> , d'Orbigny.	
„ <i>eximia</i> , Hantken.	<i>Operculina complanata</i> (Defrance).	
„ <i>opercularis</i> (d'Orbigny).	„ „ var. <i>granulosa</i> , Leymerie.	
„ <i>orbicularis</i> (Terquem).	<i>Heterostegina depressa</i> , d'Orbigny.	

In the foregoing list 247 species and varieties are enumerated, and in addition the following are given in Mr. Brady's MS. notes:—*Cornuspira sulcata*, *Orbiculina orbicularis*, *Haplophragmium lituus*, *Haplophragmium simplex*, *Lagena stilifera*, var. *formosa*, *Lagena reussiana*, *Polymorphina horrida*, and *Rupertia crassitesta*; if valid species these would bring the total to 255 species.

STATIONS 185
TO 185D.
ORGANISMS FROM
SURFACE NETS.

Surface Organisms.—The following species is recorded from the surface at this Station :—

COPEPODA (Brady, Zool. pt. 23).

Heterochata spinifrons, Claus.

The tow-net was out during the night of August 30–31, and yielded *Sagitta*, small Crustacea, Zoëæ, larvæ of Lamellibranchs and Gasteropods, Pteropods, small fishes and fish eggs.

AT CAPE YORK.

The Challenger arrived at Cape York at 6 P.M. on September 1, remaining there till 11 A.M. on September 8, during which time many dredgings were taken in shallow water by Mr. Murray and Mr. Moseley in the steam pinnace (for description of Cape York see *Narr. Chall. Exp.*, vol. i. pp. 532–541.).

STATIONS 186
AND 187.

Stations 186 and 187 (Soundings 318 and 319), off Cape York (see Chart 31).

September 8, 9, 1874.

At 11 A.M. on September 8 weighed anchor and proceeded under steam out of port. At 12.25 P.M. altered course for Prince of Wales Channel. At 3 P.M. stopped off Wednesday Island, and took three hauls with the dredge in 8 fathoms, deposit composed of coarse sand, shells, and gravel, containing 59.66 per cent. of carbonate of lime (Station 186). The dredge each time came up full of coral and seaweeds. At 4 P.M. proceeded towards Hammond Island, and at 5.45 P.M. stopped and anchored between Hammond and Wednesday Islands. Picked up pinnace and cutter, in which Mr. Murray during the day dredged between Cape York and Wednesday Island, and landed a party on Wednesday Island to collect specimens, shoot birds, &c.

At 5.30 A.M. on September 9, weighed anchor, and at 6.20 A.M. made sail, proceeding through the Prince of Wales Channel towards Booby Island. Landed naturalists and officers on Booby Island, and afterwards obtained two hauls with the dredge and one with the trawl in 6 fathoms, deposit composed of sand and shells, containing 77.90 per cent. of carbonate of lime (Station 187). Many specimens were procured. At 1.30 P.M. completed dredging and trawling; boat returned from the island. Made all plain sail and proceeded towards the Arrou Islands.

The following species are recorded in the Zoological Reports from the vicinity of Cape York and Torres Strait, including Stations 186 and 187, the depth being indicated :—

KERATOSA (Poléjaeff, Zool. pt. 31).

ANIMALS FROM
CAPE YORK.

Spongelia horrida, Selenka. Three specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Psammoclema vosmaeri, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

Hippospongia anomala, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

Carteriospongia radiata, Hyatt. Four specimens (off Wednesday Island, shallow water); obtained at no other locality by the Challenger.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Chalina palmata (Lamarck). One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and European Seas and Australia.

„ sp. (?). Fragment (Torres Strait, 3 to 11 fathoms).

Gelliodes fibulata, Ridley. Four specimens (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait and Bass Strait (?).

Esperella gelatinosa (Ridley). One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Mascarene Islands.

Clathria aculeata, Ridley. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.

„ *decumbens*, Ridley. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Amirante Islands.

Acanthella pulcherrima, n.sp. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.

„ (?) *stipitata*, Carter, var. nov. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Bass Strait.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Tetilla merguiensis (Carter). One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Mergui Archipelago and coast of Burmah.

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- Craniella simillima* (Bowerbank), var. One specimen (Station 186, 8 fathoms); obtained also at Port Jackson and Philippines.
- Myriastria simplicifurca*, n.g., n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- „ *clavosa* (Ridley). Several specimens (Station 186, 8 fathoms); obtained also at Stations 208 and 212, 8 and 10 fathoms. Recorded from Torres Strait and Arafura Sea.
- Pilochrota purpurea* (Ridley), var. *longancora*, nov. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait and Arafura Sea.
- „ *moseleyi*, n.g., n.sp. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- Disyringa dissimilis* (Ridley). (Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Port Darwin and Torres Strait.
- Tethya seychellensis* (Wright). One specimen (Station 186, 8 fathoms); obtained also at Philippines. Recorded from Seychelle Islands.

CALCAREA (Poléjacff, Zool. pt. 24).

- Leucosolenia challengeri*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- Heteropegma nodus gordii*, n.g., n.sp. One specimen (Station 186, 8 fathoms); obtained also at Station 36. Only species of the genus.
- Anamixilla torresi*, n.g., n.sp. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality. Only species of the genus.
- Leuconia dura*, n.sp. One specimen (Station 186, 8 fathoms); obtained also at Station 36.

ALCYONARIA (Wright and Studer, Zool. pts. 64 and 81).

- Echinogorgia pseudosassapo*, Kolliker. One specimen (Torres Strait); obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.
- Plexauroides praelonga* (Ridley). Two specimens (Stations 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.
- Leptogorgia torresia*, n.sp. One specimen (Torres Strait); obtained at no other locality.

- Juncella gemmacea* (Valenciennes). One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Indian Ocean and Australia. CAPE YORK.
- „ *junceae* (Pallas), var. *alba*, nov. Many fragments (Torres Strait, 7 to 11 fathoms); obtained at no other locality. Recorded from Australia.
- Ellisella maculata*, Studer. One specimen (Torres Strait); obtained also at Banda. Recorded from Australia.
- Iciligorgia orientalis*, Ridley. One specimen (Torres Strait); obtained at no other locality by the Challenger. Recorded from Torres Strait.
- Melitodes dichotoma* (Pallas). Several specimens (Torres Strait); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *esperi*, n.sp. One specimen (Torres Strait); obtained at no other locality.
- Heliopora carulea*, Blainville. Fragment (Station 186, 8 fathoms); obtained also at Philippines. Recorded from Singapore to Torres Strait.
- Spongodes spinosa*, Gray. Two specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Guinea.
- „ *macrospina*, n.sp. One specimen (Torres Strait, 8 to 11 fathoms); obtained at no other locality.
- „ *umbellata*, n.sp. One specimen (Torres Strait, 8 to 11 fathoms); obtained at no other locality.
- „ *bicolor*, n.sp. One specimen (Torres Strait, 8 to 11 fathoms); obtained also at Station 212, 10 fathoms.
- „ *heterocyathus*, n.sp. One specimen (Torres Strait, 8 to 11 fathoms); obtained at no other locality.
- „ *coronata*, n.sp. Two specimens (Torres Strait, 8 to 11 fathoms); obtained at no other locality.
- Telesto (Carijoa) trichostemma* (Dana). One specimen (Torres Strait, 8 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Fiji.

ACTINIARIA (Hertwig, Zool. pts. 15 and 72).

- Sphenopus arcuaceus*, n.sp. Three specimens (Cape York (?) and Station 187, 6 fathoms); obtained at no other locality.

REEF CORALS (Quelch, Zool. pt. 46).

- Stylophora digitata* (Pallas). One specimen (Cape York, 5 fathoms); obtained also at Amboina.

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- Galaxea musicalis* (Esper). One specimen (Cape York, 5 fathoms); obtained at no other locality by the Challenger.
- Euphyllia glabrescens* (Chamisso and Eysenhardt). Several specimens (Cape York, shore); obtained also at Banda.
- „ *turgida*, Dana. (Cape York, shore); obtained at no other locality by the Challenger.
- „ *striata*, M.-Edwards and Haime. One specimen (Cape York, shore); obtained at no other locality by the Challenger.
- Mussa aspera*, M.-Edwards and Haime. One specimen (Cape York, 5 fathoms); obtained at no other locality by the Challenger.
- Goniastrea quoyi*, M.-Edwards and Haime. One specimen (Cape York, shore); obtained also at Banda.
- Moseleya latistellata*, n.g., n.sp. One specimen (Wednesday Island, 8 fathoms); obtained at no other locality. Only species of the genus.
- Dendrophyllia axifuga*, M.-Edwards and Haime. One specimen (Wednesday Island, 8 fathoms); obtained at no other locality by the Challenger.
- „ *conferta*, n.sp. One specimen (Australia—exact locality not recorded); obtained at no other locality.
- Turbinaria crater* (Pallas). Two specimens (Cape York and Wednesday Island, shore to 8 fathoms); obtained also at Amboina.
- „ *cinerascens* (Ellis and Solander). Two specimens (Cape York, shore); obtained at no other locality by the Challenger.
- „ *patula* (Dana). Three specimens (Wednesday Island, 8 fathoms); obtained at no other locality by the Challenger.
- „ *peltata* (Esper). One specimen (Cape York, shore); obtained at no other locality by the Challenger.
- „ *æqualis*, n.sp. One specimen (Wednesday Island, 8 fathoms); obtained at no other locality.
- Montipora exserta*, n.sp. One specimen (Wednesday Island, 8 fathoms); obtained at no other locality.
- Alveopora retusa*, Verrill. One specimen (Cape York, 5 fathoms); obtained at no other locality by the Challenger.

HYDROIDA (Allman, Zool. pts. 20 and 70).

- Sciurella indurisa*, n.g., n.sp. (Cape York, 5 to 10 fathoms); obtained at no other locality. Only species of the genus.
- Acanathella*¹ *effusa* (Busk). (Off Cape York); obtained also at Philippines; 10 fathoms. Recorded from Torres Strait ("Rattlesnake").

¹ This generic name was used in 1862 by Schmidt for a genus of Monaxonid Sponges.

- Lytocarpus spectabilis*, n.sp. (Station 186, 8 fathoms); obtained also at Philippines, 10 fathoms. CAPE YORK.
- Diplocyathus dichotomus*, n.g., n.sp. (Cape York, 8 to 12 fathoms); obtained at no other locality. Only species of the genus.
- Thyroscyphus simplex*, n.sp. (Cape York, 8 to 12 fathoms); obtained at no other locality.
- Lictorella halecioides*, Allman. (Cape York, 8 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Faroe Channel ("Porcupine").
- Thuiaria vineta*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- Desmoscyphus obliquus*, n.sp. (Cape York, 8 to 12 fathoms); obtained also at Bahia.

CRINOIDEA (Carpenter, Zool. pt. 60).

- Antedon multiradiata*, n.sp. Two specimens (Station 187, 6 fathoms); obtained at no other locality.
- „ *microdiscus*, Bell. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *variipinna*, Carpenter. Two specimens (Station 186, 8 fathoms); obtained also at Arrou Islands. Recorded from Torres Strait, Dundas Strait, Arafura Sea, Borneo, and Canton.
- Actinometra pectinata* (Retzius). One specimen (Cape York, 8 to 12 fathoms); obtained also at Philippines. Recorded from Indian and Australian seas, and East Indies.
- „ *solaris* (Lamarck). Numerous specimens (Cape York and Station 187, 6 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ *paucicirra*, Bell. Many specimens (Cape York and Station 187, 6 to 12 fathoms); obtained also at Arrou Islands. Recorded from Australia.
- „ *maculata*, n.sp. Two specimens (Station 186, 8 fathoms); obtained at no other locality.
- „ *valida*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- „ *multiradiata* (Linné). One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ *belli*, n.sp. Three specimens (Station 186, 8 fathoms); obtained at no other locality.

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Actinometra parvicirra (Müller). Five specimens (Station 186, 8 fathoms); for distribution see the Cape.

ASTEROIDEA (Sladen, Zool. pt. 51).

Astropecten zebra, n.sp. (Station 186, 8 fathoms); obtained at no other locality.

„ „ var. *rosea*, nov. Three specimens (Station 187, 6 fathoms); obtained at no other locality.

Luidia forficifer, n.sp. (Station 187, 6 fathoms); obtained also at Station 188, 28 fathoms.

Stellaster inaei, Gray. (Stations 186 and 187, 8 and 6 fathoms); obtained also at Stations 188 and 208, 28 and 18 fathoms. Recorded from Indo-Pacific region.

„ *princeps*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.

Anthenea tuberculosa, Gray. One specimen (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Pentaceros turritus, Linck. (Station 187, 6 fathoms); obtained also at Station 188, 28 fathoms, and Philippines. Recorded from Indian and Pacific Oceans.

„ *callimorphus*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.

Nepanthia brevis, Perrier. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.

Ophidiaster tuberifer, n.sp. (Station 186, 8 fathoms); obtained at no other locality.

„ *helicostichus*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.

Metrodora subulata, Gray. (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Migupou and New Zealand.

Retaster insignis, n.sp. (Station 187, 6 fathoms); obtained also at Station 189, 25 fathoms.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiolepis cincta, Müller and Troschel. (Station 186, 8 fathoms); obtained also at Philippines.

„ *annulosa* (Blainville). (Station 186, 8 fathoms); obtained also at Ternate.

Ophiothrix longipeda (Lamarek). (Station 186, 8 fathoms); for distribution see Tongatabu.

- Ophiothrix stelligera*, Lyman. (Station 186, 8 fathoms); obtained also at Fiji, CAPE YORK, Arafura Sea (?), and Philippines.
- Ophiomaza cacaotica*, Lyman. (Cape York, and Station 187, 6 fathoms); obtained at no other locality by the Challenger.
- Euryale aspera*, Lamarck. (Station 186, 8 fathoms); obtained also at Station 203, 12 to 20 fathoms.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Phyllacanthus annulifera* (Lamarck). (Cape York, and Station 186, 8 fathoms); obtained also at Station 188, 28 fathoms.
- „ *verticillata* (Lamarck). (Station 186, 8 fathoms); obtained at no other locality by the Challenger.
- Pleurechinus bothyroides*, Agassiz. (Station 186, 8 fathoms); obtained also at Japan.
- Salmacis globator*, Agassiz. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.
- „ *rarispina*, Agassiz. (Station 186, 8 fathoms); obtained also at Stations 188 and 203, 12 to 28 fathoms.
- Laganum depressum*, Lesson. (Station 187, 6 fathoms); obtained also in Arafura Sea.
- Peronella decagonalis* (Lesson). (Station 186, 8 fathoms, and Torres Strait); for distribution see Station 172.
- Breynia australasiæ* (Leach). (Torres Strait); obtained at no other locality by the Challenger.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

- Synapta verrilli*, n.sp. Two specimens (Station 186, 8 fathoms); obtained at no other locality.
- Colochirus challengerii*, n.sp. Three specimens (Station 186, 8 fathoms); obtained at no other locality.
- Actinocucumis typica*, Ludwig. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and China.
- Thyone fusus* (Müller), var. *papuensis*, nov. One specimen (Station 186, 8 fathoms); obtained at no other locality. The species recorded from European seas.

ENTOZOA (Linstow, Zool. pt. 71).

- Tania clavulus*, n.sp. Numerous fragments (from intestine of *Ptilorhis alberti*, Cape York).

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Tania trichoglossi, n.sp. (?). Nine fragments (from intestine of *Trichoglossus swainsoni*, Cape York).

ANNELIDA (M'Intosh, Zool. pt. 34).

Lepidonotus cristatus, Grube. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.

Eupompe australiensis, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

Eunice torresiensis, n.sp. Numerous specimens (Station 186, 8 fathoms); obtained at no other locality.

Hyalinacia tubicola, Müller, var. *papuensis*, nov. (Station 186, 8 fathoms); obtained at no other locality. A widely-distributed species.

Thelepus sp. (?). Fragment (Station 186, 8 fathoms).

MYZOSTOMIDA (Graff, Zool. pts. 27 and 61).

Myzostoma horologium, n.sp. (Stations 186 and 187, host uncertain).

„ *dentatum*, n.sp. (Station 186, on *Antedon variipinna*).

„ *intermedium*, n.sp. (Station 187, on *Antedon multiradiata*).

„ *quadrifidum*, n.sp. (Station 186, on *Antedon variipinna*).

„ *filiferum*, n.sp. (Station 186, on *Antedon variipinna*).

OSTRACODA (Brady, Zool. pt. 3).

Macrocypris orientalis, Brady. (Station 187, 6 to 8 fathoms); obtained also at New Guinea. Recorded from Malay Archipelago.

Bairdia amygdaloides, Brady. (Station 187, 6 to 8 fathoms); for distribution see Station 162.

„ *foreolata*, Brady. (Station 187, 6 to 8 fathoms); for distribution see Station 33.

„ *fortificata*, n.sp. One specimen (Station 187, 6 to 8 fathoms); obtained at no other locality.

Cythere ovalis, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.

„ *lubbockiana*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.

„ *crispata*, Brady. (Station 187, 6 to 8 fathoms); obtained also at Port Jackson and Hong Kong.

„ *cancellata*, Brady. (Station 187, 6 to 8 fathoms); obtained also at Station 172.

- Cythere reussi*, Brady. (Station 187, 6 to 8 fathoms); obtained also at CAPE YORK, Station 313 and Sandwich Islands, 55 and 40 fathoms. Recorded from Colon-Aspinwall.
- „ *sabulosa*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- „ *curvicostata*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- „ *lauta*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- „ *packardi*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- „ *cristatella*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- „ *fungoides* (Brady). (Station 187, 6 to 8 fathoms); obtained also at Stations 33 and 189.
- „ *goujoni*, Brady. (Station 187, 6 to 8 fathoms); obtained also at Port Jackson and Hong Kong.
- „ *tetrica*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- „ *melobesioides*, Brady. (Station 187, 6 to 8 fathoms); obtained at no other locality by the Challenger. Recorded from Mauritius.
- Loxoconcha pumicosa*, n.sp. (Station 187, 6 to 8 fathoms); obtained also at Admiralty Islands.
- „ *sculpta*, Brady. (Station 187, 6 to 8 fathoms); obtained at no other locality by the Challenger. Recorded from Cape Verdes.
- „ *australis*, n.sp. (Station 187, 6 to 8 fathoms); obtained also at Port Jackson.
- „ *variolata*, Brady. (Station 187, 6 to 8 fathoms); obtained at no other locality by the Challenger. Fossil—Antwerp Crag.
- Xestoleberis curta*, Brady. (Station 187, 6 to 8 fathoms); for distribution see Station 33.
- „ *margaritea*, Brady. (Station 187, 6 to 8 fathoms); obtained at no other locality by the Challenger. Recorded from Mauritius and Mediterranean.
- „ *foveolata*, n.sp. (Station 187, 6 to 8 fathoms); obtained at no other locality.
- Cytherella semitalis*, Brady. (Station 187, 6 to 8 fathoms); obtained also at Station 189, 28 fathoms, New Guinea, and Admiralty Islands. Recorded from Java.
- „ *cavernosa*, Brady. (Station 187, 6 to 8 fathoms); obtained also at Station 162.
- „ *cingulata*, Brady. (Station 187, 6 to 8 fathoms); obtained also at Station 189, Hong Kong, and Port Jackson.

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CIRRIPIEDIA (Hoek, Zool. pt. 25).

Balanus amaryllis, Darwin. (Station 186, 8 fathoms); obtained also at Station 233A, 8 to 50 fathoms, and Japan. Recorded from Indian and Pacific Oceans.

AMPHIPODA (Stebbing, Zool. pt. 67).

Leucothoë flindersi, n.sp. One specimen (Station 186, 7 to 8 fathoms); obtained at no other locality.

Dexamine flindersi, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

Pareiasmopus suluensis (Dana). One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Sulu Sea.

Amphithoë flindersi, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

Cerapus flindersi, n.sp. One specimen (Flinders Passage); obtained at no other locality.

Vibilia viator, n.sp. One specimen (Cape York); obtained at no other locality.

ISOPODA (Beddard, Zool. pt. 48).

Anceus latidens, n.sp. One specimen (Flinders Passage, 7 fathoms); obtained at no other locality.

CUMACEA (Sars, Zool. pt. 55).

Cyclaspis pusilla, n.sp. One specimen (Flinders Passage, 7 fathoms); obtained at no other locality.

„ *exculpta*, n.sp. One specimen (Flinders Passage, 7 fathoms); obtained at no other locality.

STOMATOPODA (Brooks, Zool. pt. 45).

Gonodactylus graphurus, Miers. Two specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.

Alima gracilis, M.-Edwards (= larva of *Squilla*) (vicinity of Cape York).

MACRURA (Spence Bate, Zool. pt. 52).

Penæus velutinus, Dana. Four specimens (Stations 186 and 187, 8 and 6 fathoms); for distribution see Station 184.

- Cheirothrix parvimanus*, n.g., n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality. Only species of the genus. CAPE YORK.
- Alpheus avarus*, Fabricius. (Albany Island, Cape York); for distribution see Station 172.
- „ *acuto-femoratus*, Dana. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from India.
- „ *crassimanus*, Heller. One specimen (Albany Island, Cape York); obtained at no other locality by the Challenger. Recorded from Nicobars.
- Betæus microstylus*, n.sp. One specimen (Albany Island, Cape York); obtained at no other locality.
- Paralpheus diversimanus* (Olivier). Seven specimens (Station 186, 8 fathoms, and Albany Island, Cape York); obtained at no other locality by the Challenger.
- Synalpheus falcatus*, n.g., n.sp. Six specimens (Station 186, 8 fathoms); obtained at no other locality. Only species of the genus.
- Pontonia meleagrinx* (Peters). One specimen (from pearl-oyster, Torres Strait—presented at Sydney). Recorded from African coast.

ANOMURA (Henderson, Zool. pt. 69).

- Mastigochirus quadrilobatus*, Miers. Two specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Torres Strait.
- Diogenes guttatus*, n.sp. One specimen (Station 187, 6 fathoms); obtained at no other locality.
- Pagurus imbricatus*, M.-Edwards. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from New Zealand and Australian seas.
- Spiropagurus spiriger* (De Haan). One specimen (Torres Strait); obtained also at Stations 188, 190, 208, Admiralty Islands, and Hong Kong, 10 to 49 fathoms. Recorded from Japanese, Chinese, and Indian seas.
- Petrolisthes annulipes* (White), Miers. Two specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Pachycheles pulchellus* (Haswell). One specimen (Station 186, 8 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Australia.

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Polyonyx obesulus (White), Miers. Four specimens (Station 186, 8 fathoms—three taken from interior of *Hippospongia anomala*); obtained at no other locality by the Challenger. Recorded from Madgica-Sima Islands and Australia.

BRACHYURA (Miers, Zool. pt. 49).

Huenia proteus, De Haan. Four specimens (Station 186, 8 fathoms); obtained also in Arafura Sea. Recorded from China, Japan, and Philippines to Australia.

Menathius monoceros (Latreille), var. *angusta*, Dana. One specimen (Station 186, 8 fathoms); obtained also at Station 172.

Chorilibinia gracilipes, Miers. One specimen (Torres Strait); obtained also at Station 188, 28 fathoms. Recorded from Australia and New Guinea.

Schizophrys aspera (M.-Edwards). One specimen (Torres Strait); obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.

Pseudocicippa (?) *varians*, Miers. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Lambrus affinis, M.-Edwards. One specimen (Torres Strait); obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.

„ *intermedius*, Miers. One specimen (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Corean seas.

„ (*Aulacolambrus*) *hoplonotus*, Adams and White. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.

„ („) *hoplonotus*, var. *granulosus*, Miers. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger.

Actau granulata (Audouin). One specimen (Torres Strait); obtained at no other locality by the Challenger.

„ *hirsutissima* (Ruppell). One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger.

„ *hystrix*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

- Pilumnus pulcher*, Miers. Two specimens (Station 186, 8 fathoms, and Torres Strait); obtained at no other locality by the Challenger. Recorded from Australia. CAPE YORK.
- „ *seminudus*, Miers. One specimen (Torres Strait); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *labyrinthicus*, Miers. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Neptunus (Amphitrite) rugosus*, M.-Edwards. One specimen (Torres Strait); obtained also at Stations 208 and 212, 10 to 20 fathoms. Recorded from Australia.
- „ *(Achelous) unispinosus* (Miers). Two specimens (Station 186, 8 fathoms, and Torres Strait); obtained at no other locality by the Challenger. Recorded from Australia.
- Thalamita sima*, M.-Edwards. One specimen (Station 186, 8 fathoms); obtained also at Port Jackson.
- „ *intermedia*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- „ *crenata* (Rüppell). One specimen (Albany Island, Cape York); obtained at no other locality by the Challenger.
- Ceratoplax ciliata*, Stimpson. One specimen (Torres Strait); obtained at no other locality by the Challenger. Recorded from China Sea.
- Macrophthalmus podophthalmus*, Eydoux and Souleyet. One specimen (Torres Strait); obtained also in Arafura Sea.
- Pinnotheres villosulus*, Guérin-Ménéville. One specimen (from pearl-oyster, Torres Strait—presented at Sydney).
- Myctiris longicarpus*, Latreille. Numerous specimens (Albany Island, Cape York); obtained at no other locality by the Challenger. Recorded from Australia, Malaysia, and New Caledonia.
- Matuta inermis*, Miers. Four specimens (Station 187, 6 fathoms); obtained at no other locality by the Challenger.
- Myra affinis*, Bell. One specimen (Torres Strait); obtained at no other locality by the Challenger.
- „ *australis*, Haswell. One specimen (Station 187, 6 fathoms); obtained at no other locality by the Challenger.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Gastrochæna lamellosa*, Deshayes. (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.

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- Clavagella torresi*, n.sp. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- Corbula crassa*, Hinds, var. (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Port Essington, Macassar Strait, and Philippines.
- „ *scaphoides*, Hinds. Single valve (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Singapore, Hong Kong, and Philippines.
- „ *monilis*, Hinds. (Stations 186 and 187, 8 and 6 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Philippines.
- Mya* sp. (?). Single valve (Flinders Passage, 7 fathoms).
- Mactra* (*Mactrinula*) *plicataria*, Linné. One specimen (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Java, Sumatra, and Tranquebar.
- Calodon elongatus*, Carpenter. One specimen (Flinders Passage, 7 fathoms); obtained at no other locality by the Challenger. Recorded from Borneo and China.
- Myodora trigoni*, Reeve. Single valve (Flinders Passage, 7 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ sp. (?). Single valve (Flinders Passage, 7 fathoms).
- „ sp. (?). Single valve (Station 187, 6 fathoms); obtained also at Station 188, 28 fathoms.
- Semele infans*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- Psammobia anomala*, Deshayes. One specimen (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Australia.
- Tellina compacta*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.
- „ (*Angulus*) *lux*, Hanley, var. (Torres Strait, 8 to 11 fathoms); obtained also at Station 189, 25 to 29 fathoms. Recorded from Philippines.
- „ („ ?) *rhomboides*, Quoy and Gaimard. (Cape York, 3 to 12 fathoms); obtained also at Fiji.
- „ (*Arcopagia*) *elegantissima*, n.sp. (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ (—?) *tenuilirata*, Sowerby. (Flinders Passage, 7 fathoms); obtained also at Port Jackson and Fiji.
- „ (—?) *casta*, Hanley. (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Singapore.

- Tellina* (——?) *languida*, n.sp. (Torres Strait and Flinders Passage, 3 to 11 fathoms); obtained at no other locality. CAPE YORK.
- „ (——?) *semen*, Hanley. (Station 187 and Flinders Passage, 7 and 6 fathoms); obtained also at Fiji.
- Donax nitidus*, Deshayes. (Station 187, 6 fathoms); obtained also at Port Jackson.
- Petricola lapicida* (Chemnitz), juv. (Station 186 and Flinders Passage, 8 and 7 fathoms); obtained at no other locality by the Challenger.
- Venus torresiana*, Smith. (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.
- „ (*Antigona*) *lamellaris* (Schumacher). (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Japan, China, and Australia.
- „ (*Chione*) *calophylla*, Philippi. (Station 187, 3 to 28 fathoms?); obtained also at Station 203 and Port Jackson.
- „ („) *foliacea*, Philippi. (Stations 186 and 187, 8 and 6 fathoms); obtained also at Station 189, 28 fathoms. Recorded from Indian and Pacific Oceans.
- „ („) *infans*, n.sp. (Station 187, 6 fathoms); obtained also at Station 188, 28 fathoms.
- „ (*Gomphina*) *undulosa*, Lamarek. One specimen (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Cytherea* (*Caryatis*) *coxeni*, Smith. (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *regularis*, n.sp. (Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms.
- Circe scripta* (Linné). (Torres Strait, 3 to 11 fathoms); obtained also at Port Jackson.
- „ *fastigiata* (Sowerby). Single valve (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger.
- „ *obliquissima*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- Dosinia deshayesii*, Adams. (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *histrion* (Gmelin), var. (Station 187 and Flinders Passage, 6 and 7 fathoms); obtained also at Station 189, 25 to 29 fathoms.
- „ *sculpta* (Hanley). Single valve (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

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- Clementia papyracea* (Gray). (Torres Strait, 3 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Philippines, Malacca, and Japan.
- Cardium (Fragum) imbricatum*, Sowerby. (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Tridacna crocea*, Lamarck. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger.
- Chama sulphurea*, Reeve. One specimen (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ *jukesii*, Reeve. (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Lucina (Divaricella) irpex*, n.sp. (Cape York, 3 to 12 fathoms); obtained at no other locality.
- Diplodonta scalpta*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.
- „ *corpulenta*, n.sp. (Station 187, 6 fathoms); obtained also at Station 188, 28 fathoms.
- „ *subglobosa*, n.sp. (Station 187 and Flinders Passage, 6 and 7 fathoms); obtained at no other locality.
- „ *conspicua*, n.sp. (Station 187, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms.
- Carditella torresi*, n.sp. (Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms.
- Crassatella rhomboides*, n.sp. (Station 187, 6 fathoms); obtained also at Station 188, 28 fathoms.
- Trigonia uniophora*, Gray. (Albany Island, 3 to 12 fathoms); obtained also at Stations 188 and 189, 25 to 28 fathoms.
- Nucula obliqua*, Lamarck. (Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Australia.
- Limopsis cancellata* (Reeve). (Station 186, 8 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Singapore and Torres Strait.
- Arca navicularis*, Bruguière. (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Amboina, and China.
- „ *imbricata*, Bruguière. (Station 187, 6 fathoms); obtained also at Station 113A.
- „ (*Barbatia*) *lima*, Reeve. (Station 186, 8 fathoms); obtained also at Station 208, 18 fathoms. Recorded from Philippines.

- Arca (Scapharca) clathrata*, Reeve. Three valves (Torres Strait, 3 to 11 fathoms); obtained also at Amboina. Recorded from Philippines. CAPE YORK.
- „ (*Trisis*) *semitorta*, Lamarck. (Torres Strait, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines, Australia, and Tasmania.
- Mytilus sulcatus* (Lamarck?), (Reeve). Numerous dead valves (Wednesday Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Stavelia*) *horridus*, Dunker. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Philippines.
- Lithodomus malaccanus*, Reeve. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.
- Malleus albus*, Lamarck. (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Japan, China, and Philippines.
- Avicula macroptera*, Lamarck. (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Moluccas.
- „ (*Meleagrina*) *muricata*, Reeve. Several specimens (Station 187, 6 fathoms); obtained at no other locality by the Challenger.
- „ („) *smaragdina*, Reeve. (Cape York, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and Moluccas.
- Spondylus zonalis*, Lamarck. Two specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Mauritius and Philippines.
- Plicatula* sp. (?). Single valve (Flinders Passage, 7 fathoms); obtained also at Amboina.
- Lima (Limatula) torresiana*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.

SCAPHOPODA AND GASTEROPODA (Watson, Zool. pt. 42).

- Dentalium javanum*, Sowerby. (Station 186 and Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Malacca.
- Siphodentalium eboracense*, n.sp. (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- Cadulus simillimus*, n.sp. (Station 187, 6 fathoms); obtained also at Station 185.
- Puncturella* n.sp. (?). (Stations 186, 187, Flinders Passage, and Torres Strait, 3 to 11 fathoms).

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- Trochus (Euchelus) atratus* (Gmelin). (Flinders Passage and Albany Island; 3 to 12 fathoms); obtained also at Station 208, 18 fathoms. Recorded from Indo-Pacific region.
- „ *(Monodonta) labio*, Linné. (Station 187, 6 fathoms); obtained also at Japan. Recorded from Africa to Japan and Australia.
- „ *(Ziziphinus) similis*, Reeve. (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *(Solariella) vitiligineus*, Menke. (Station 186, 8 fathoms); obtained also at Port Jackson.
- „ („), three species undetermined. (Station 187 and Flinders Passage, 6 and 7 fathoms).
- „ , two species undetermined. (Torres Strait and Flinders Passage, 3 to 11 fathoms).
- Scissurella* sp. (?). (Station 186, 8 fathoms).
- Cyclostrema*, six species undetermined. (Stations 186, 187, and Torres Strait, 3 to 11 fathoms).
- Phasianella*, four species undetermined. (Stations 186, 187, Flinders Passage, and Torres Strait, 3 to 11 fathoms).
- Turbo (Senectus) chrysostomus*, Linné. (Flinders Passage, 7 fathoms); obtained also at Tongatabu and Fiji.
- „ sp. (?). (Flinders Passage, 7 fathoms).
- Trachysma* (?) sp. (Station 187, 6 fathoms).
- Scalaria (Cirsostrema) dentiscalpium*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.
- „ , two species undetermined. (Station 186 and Torres Strait, 3 to 11 fathoms).
- Murex (Tribulus) macgillivrayi*, Dohrn. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *acanthodes*, n.sp. (Albany Island, 3 to 12 fathoms); obtained at no other locality.
- „ *(Chicoreus) cervicornis*, Lamarek. (Station 187 and Albany Island, 3 to 12 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Australia.
- „ („) *maurus*, Broderip. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Anaa Island, Pacific Ocean.
- „ („) *monodon*, Sowerby. (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.

- Murex (Pteronotus) acanthopterus*, Lamarek. (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Port Jackson. CAPE YORK.
- „ (*Pseudomurex*) *pholidotus*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- Purpura (Cronia) amygdala*, Kiener. (Albany Island, 3 to 12 fathoms); obtained also at Port Jackson.
- Nassa (Zeuxis) algida*, Reeve (?) (Albany Island, 3 to 12 fathoms); obtained also at Station 208, 18 fathoms. Recorded from Australia.
- Phos scalarioïdes*, Adams. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ (*Strongylocera*) *sculptilis*, Adams. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Oliva (Ispidula) australis*, Duclos. (Torres Strait and Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ , two species undetermined. (Station 187 and Flinders Passage, 6 and 7 fathoms).
- Columbella (Zafra) troglodytes*, Souverbie. (Station 186, 8 fathoms); obtained also at Fiji and Sandwich Islands.
- „ , three species undetermined. (Station 186, 8 fathoms).
- Mitra (Cancilla) reticulata*, Adams. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Port Essington.
- „ („) *rufescens*, Adams. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from China Seas.
- „ (*Costellaria*) *amanda*, Reeve. (Station 186, 8 fathoms); obtained also at Fiji.
- „ („) *sculptilis*, Reeve. (Albany Island, 3 to 12 fathoms); obtained also at Arrou Islands. Recorded from Philippines.
- „ („), two species undetermined. (Albany Island, 3 to 12 fathoms).
- Voluta (Vespertilio) sophia*, Gray. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ sp. (?). (Station 187, 6 fathoms).
- Marginella*, six species undetermined. (Stations 186, 187, and Flinders Passage, 6 to 8 fathoms).

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- Pleurotoma marmorata*, Lamarek. (Station 187, 6 fathoms); obtained also at Station 208, 18 fathoms, and Fiji.
- „ *undosa*, Lamarek. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ (*Drillia*) *sterrha*, n.sp. (Flinders Passage and Albany Island, 3 to 12 fathoms); obtained at no other locality.
- „ , four species undetermined. (Station 186 and Flinders Passage, 8 and 7 fathoms).
- Terebra* (*Myurella*) *turrita*, Smith. One specimen (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Torres Strait.
- „ sp. (?). (Flinders Passage, 7 fathoms).
- Ranella* (*Argobuccinum*) *pusilla*, Broderip. (Albany Island, 3 to 12 fathoms); obtained also at Tongatabu and Fiji.
- „ (*Eupleura*) *perca* (Perry). (Flinders Passage, 7 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Guinea.
- Nassaria sinensis*, Sowerby. (Albany Island, 3 to 12 fathoms); obtained also at Station 188, 28 fathoms. Recorded from China Seas.
- Strombus* (*Canarium*) *muricatus*, Martini. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- „ (*Gallinula*) *campbellii*, Gray. (Station 187, Flinders Passage, and Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *canarium*, Linné. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Cypræa bicolor*, Gaskoin (?). One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Tasmania, and Sandwich Islands.
- „ *miliaris*, Gmelin. One specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia, Moluccas, Japan, and Philippines.
- Natica* (*Mamma*) *mamilla* (Linné). (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from whole Indian Ocean and Malay Archipelago. Fossil—shores of Red Sea.

- Natica*, two species undetermined. (Station 187 and Torres Strait, 3 to 11 fathoms).
- Capulus (Amathina) tricarinatus* (Linné). (Stations 186 and 187, 8 and 6 fathoms); obtained also at Station 233, 8 fathoms. Recorded from Philippines and Japan.
- Xenophora solarioïdes* (Reeve). (Albany Island, 3 to 12 fathoms); obtained also at Stations 208 and 212, 10 to 20 fathoms. Recorded from Philippines and Andamans.
- Parastrophia challengerii*, de Folin, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- Watsonia elegans*, de Folin, n.g., n.sp. Three specimens (Station 186, 8 fathoms); obtained at no other locality. Only species of the genus.
- Cæcum attenuatum*, de Folin, n.sp. Nine specimens (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ *chinense*, de Folin. Two specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger.
- „ *subflavum*, de Folin, n.sp. Two specimens (Station 186, 8 fathoms); obtained at no other locality.
- „ *succineum*, de Folin, n.sp. Two specimens (Station 186, 8 fathoms); obtained at no other locality.
- „ *microcylus*, de Folin, n.sp. Two specimens (Station 186, 8 fathoms); obtained at no other locality.
- „ *angustum*, de Folin, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- „ *eburneum*, de Folin, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- „ , three species undetermined. (Station 186, 8 fathoms).
- Vermetus (?) cyclicus*, n.sp. (Station 186 and Flinders Passage, 8 and 7 fathoms); obtained at no other locality.
- Turritella cingulifera*, Sowerby. (Torres Strait, 3 to 11 fathoms); obtained also at Station 188, Fiji, and Amboina.
- „ *fascialis*, Menke. (Albany Island, 3 to 12 fathoms); obtained also at Fiji.
- Odostomia convoluta*, n.sp. Several specimens (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ *corpulenta*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.
- „ *oxia*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ *oödes*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ *pupa*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ *kymatodes*, n.sp. (Flinders Passage, 7 fathoms); obtained also at Sandwich Islands (?), 40 fathoms.

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- Odostomia*, nine species undetermined. (Station 186, Flinders Passage, and Torres Strait, 3 to 11 fathoms).
- „ (*Turbonilla*) *homacotata*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ („) *dipsycha*, n.sp., var. *incerta*, nov. (Flinders Passage, 7 fathoms); the species obtained at Station 188, 28 fathoms.
- „ („ ?) *anabæa*, n.sp. (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ („), seven species undetermined. (Station 186 and Flinders Passage, 8 and 7 fathoms).
- „ (*Syrnola*) *aciculina*, Souverbie. (Flinders Passage, 7 fathoms); obtained at no other locality by the Challenger. Recorded from New Caledonia.
- Eulimella angusta*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ *coacta*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ *subtilis*, n.sp. (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- Mathilda*, three species undetermined. (Stations 186, 187, and Flinders Passage, 6 to 8 fathoms).
- Eulima martini*, Adams. (Flinders Passage, 7 fathoms); obtained also at Station 188, 28 fathoms. Recorded from Indian and Pacific Oceans.
- „ *latipes*, n.sp. Three specimens (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ , six species undetermined. (Stations 186, 187, and Flinders Passage, 6 to 8 fathoms).
- Mucronalia xanthias*, n.sp. (Station 186, 8 fathoms); obtained also at Stations 172 and 212.
- Cerithiopsis ridicula*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ , ten species undetermined. (Station 186, Flinders Passage, and Torres Strait, 3 to 11 fathoms).
- Cerithium balteatum*, Philippi (Albany Island, 3 to 12 fathoms); obtained also at Fiji.
- „ *dubium*, Sowerby. (Station 186 and Flinders Passage, 8 and 7 fathoms); obtained also at Fiji.
- „ *novahollandiæ*, Adams. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Cape York.

- Cerithium*, three species undetermined. (Station 186, 187, and Flinders Passage, 6 to 8 fathoms). CAPE YORK.
- „ (*Vertagus*) *articulatum*, Adams and Reeve. (Station 187, 6 fathoms); obtained also at Arrou Islands. Recorded from Borneo, China Sea, and East Indies.
- „ („) *turritum*, Sowerby. (Albany Island, 3 to 12 fathoms); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.
- Bittium pupiforme*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ *perparvulum*, n.sp. (Station 186, Flinders Passage, and Torres Strait, 7 and 8 fathoms); obtained also at Tongatabu and Sandwich Islands.
- „ *xanthum*, n.sp. Three specimens (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ , six species undetermined. (Station 186, Flinders Passage, and Torres Strait, 3 to 11 fathoms).
- Triforis rufula*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ , nine species undetermined. (Station 186, Torres Strait, and Flinders Passage, 3 to 11 fathoms).
- Alaba (Diala) albugo*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ (*Styliferina*) *goniochila*, Adams. (Stations 186, 187, and Flinders Passage, 6 to 8 fathoms); obtained also at Sandwich Islands, 40 fathoms. Recorded from Japan.
- „ („) *sulcata*, n.sp. One specimen (Station 187, 6 fathoms); obtained at no other locality.
- „ („ ?) *fulva*, n.sp. (Station 186 and Cape York, 3 to 8 fathoms); obtained at no other locality.
- „ sp. (?). (Station 186, 8 fathoms).
- Litorina (Hamus) montrouzieri* (Fischer). (Flinders Passage, 7 fathoms); obtained at no other locality by the Challenger. Recorded from New Caledonia.
- Barleeia imbricata*, n.sp. (Station 186, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained also at Fiji and Sandwich Islands.
- Rissoa (Alvania) trajectus*, n.sp. (Stations 186, 187, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained also at Station 188, 28 fathoms.
- „ (*Onoba*) *mercurialis*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.

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- Rissoa*, four species undetermined. (Station 187, Torres Strait, and Flinders Passage, 3 to 11 fathoms).
- Rissoina reticulata* (Sowerby) (?). (Station 186 and Flinders Passage, 8 and 7 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines, Indian Ocean, and West Indies.
- „ *triangularis* n.sp. (Stations 186, 187, and Flinders Passage, 6 to 8 fathoms); obtained at no other locality.
- „ *mercurialis*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ sp. (?). (Flinders Passage).
- Scaliola arenosa*, Adams. (Stations 186, 187, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained also at Station 185 and Sandwich Islands.
- „ *bella*, Adams. (Stations 186, 187, and Torres Strait, 3 to 11 fathoms); obtained also at Stations 172, 185, and Sandwich Islands.
- „ *caledonica*, Crosse. (Stations 186, 187, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained also at Sandwich Islands, 40 fathoms. Recorded from New Caledonia.
- Skenea* (?), two species undetermined. (Station 186 and Torres Strait, 3 to 11 fathoms).
- Actæon* (*Buccinulus*) *insculptus* (Reeve) (?). One specimen (Flinders Passage, 7 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.
- Ringicula pusilla*, n.sp. (Station 186, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ *assularum*, n.sp. (Flinders Passage, 7 fathoms); obtained at no other locality.
- „ sp. (?). (Station 186, 8 fathoms).
- Alys hyalina*, n.sp. (Stations 186 and 187, 8 and 6 fathoms); obtained also at Fiji.
- „ (*Dinia*) *dentifera*, Adams. (Station 186, 8 fathoms); obtained also at Fiji.
- „ , two species undetermined. (Station 186 and Torres Strait, 3 to 11 fathoms).
- Utriculus planospira* (Adams). (Station 187, 6 fathoms); obtained also at Station 188 (?), 28 fathoms. Recorded from Philippines.
- „ *amphizostus*, n.sp. (Stations 186, 187, and Flinders Passage, 6 to 8 fathoms); obtained at no other locality.
- „ *imillimus*, n.sp. (Station 186, Flinders Passage, and Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ , two species undetermined. (Station 187, 6 fathoms).

Utriculus (Tornatina) acrobeles, n.sp. (Station 186, 8 fathoms); obtained at no other locality. CAPE YORK.

„ („), two species undetermined. (Station 186 and Torres Strait, 3 to 11 fathoms).

Cyliclina reticulata, n.sp. (Stations 186 and 187, 8 and 6 fathoms); obtained at no other locality.

„ *subreticulata*, n.sp. (Station 187, 6 fathoms); obtained at no other locality.

„ (*Volvula*) *sulcata*, n.sp. (Station 186 and Torres Strait, 3 to 11 fathoms): obtained at no other locality.

„ , three species undetermined. (Station 186 and Flinders Passage, 8 and 7 fathoms).

Latirus n.sp. (?). (Torres Strait, 3 to 11 fathoms).

Assimineea (?) sp. (Station 186, 8 fathoms).

Leucorhynchia (?) sp. (Station 186, 8 fathoms).

POLYPLACOPHORA (Haddon, Zool. pt. 43).

Acanthopleura spiniger (Sowerby). One specimen (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia and New Zealand to Philippines.

Francisia spinosa (Bruguère). (Station 187, 6 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

NUDIBRANCHIATA (Bergh, Zool. pt. 26).

Chromodoris striatella, Bergh. Three specimens (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Torres Strait.

Thordisa (?) *clandestina*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.

POLYZOA (Busk, Zool. pts. 30 and 50; Waters, pt. 79).

Chlidonia cordieri (Audouin). (Station 186, 8 to 11 fathoms); obtained at no other locality by the Challenger. Recorded from Atlantic and Mediterranean.

Caberea lata, Busk. (Station 186, 8 fathoms); obtained also at Station 190, 45 fathoms. Recorded from Australia and New Zealand.

Carbasea cribriformis, Busk. (Station 186, 8 fathoms); obtained also at Stations 188 and 190, 28 and 45 fathoms. Recorded from Australia and Cumberland Island. [Waters calls it *Flustra cribriformis* (Busk)].

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- Salicornaria gracilis*, Busk. (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.
- Retepora hirsuta*, n.sp. (Station 186, 8 fathoms); obtained at no other locality. [Waters calls it *Retepora monilifera*, form *umbonata*, MacGillivray].
- „ *tubulata*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- Lepralia celleporoides*, n.sp. (Station 186, 8 fathoms); obtained at no other locality. [Waters calls it *Lepralia mucronata* (Smitt)].
- „ *dorsiporosa*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- Escharoides oclusa*, n.sp. (Station 186, 8 fathoms); obtained also at Station 148 and Philippines. [Waters calls it *Lepralia oclusa* (Busk)].
- Haswellia australiensis* (Haswell). (Station 186, 8 fathoms); obtained also at Station 190, 49 fathoms. [Waters calls it *Porina coronata*, var. *labrosa*, Reuss].
- Adeonella pectinata*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- Cellepora discoidea*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- „ *tridenticulata*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.
- Cupularia guineensis*, Busk. One dead specimen (Station 186, 8 fathoms); obtained at no other locality by the Challenger. Recorded from New Guinea and Philippines.
- Crisia denticulata* (Lamarck). (Station 186, 8 fathoms); obtained also at St. Paul's Rocks and Tristan da Cunha.
- Idmonca eboracensis*, n.sp. One specimen (Station 186, 8 fathoms); obtained at no other locality.
- Amathia connexa*, n.sp. (Station 186, 8 fathoms); obtained at no other locality.

TUNICATA (Herdman, Zool. pts. 17 and 38).

- Cynthia formosa*, n.sp. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ *arenosa*, n.sp. Several specimens (Station 186, 8 fathoms); obtained at no other locality.
- Collella pulchra*, n.g., n.sp. About a dozen specimens (Station 187, 6 fathoms); obtained at no other locality.
- Polychium depressum*, n.sp. One specimen (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- Prammaphidium ovatum*, n.g., n.sp. Two specimens (Torres Strait, 3 to 11 fathoms); obtained at no other locality.
- „ *pyriforme*, n.g., n.sp. Half a dozen specimens (Station 186, 8 fathoms); obtained at no other locality.

FISHES (Günther, Zool. pts. 6 and 78).

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Myriodon waigiensis, Quoy and Gaimard. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.

Mesoprion chrysotania, Bleeker. (Somerset, Cape York); obtained at no other locality by the Challenger.

Therapon servus, Linné. (Somerset); obtained also at Fiji.

„ *candovittatus*, Rich. (Somerset); obtained at no other locality by the Challenger.

Gerres abbreviatus, Bleeker. (Somerset); obtained at no other locality by the Challenger.

Lethrinus nebulosus, Forsk. (Somerset); obtained also at Fiji.

Platycephalus insidiator, Forsk. (Somerset); obtained also at Mary River, Queensland, Hong Kong, and Japan.

„ *isacanthus*, C.V. (Station 187, 6 fathoms); obtained at no other locality by the Challenger.

„ *spinosus*, Schleg. (Station 187, 6 fathoms); obtained at no other locality by the Challenger.

„ *pristiger*, C.V. (Station 187, 6 fathoms); obtained at no other locality by the Challenger.

Pegasus natans, Linné. (Somerset); obtained at no other locality by the Challenger.

Sillago ciliata, C.V. (Somerset); obtained at no other locality by the Challenger.

Caranx speciosus, Forsk. (Somerset); obtained also at Fiji.

„ *armatus*, Forsk. (Somerset); obtained at no other locality by the Challenger.

Chorinemus toloo, C.V. (Somerset); obtained at no other locality by the Challenger.

Trachynotus ovatus, Linné. (Somerset); obtained at no other locality by the Challenger.

Gobius albopunctatus, C.V. (Somerset); obtained also at Port Jackson.

„ *lynoensis*, Rich. (Somerset); obtained at no other locality by the Challenger.

„ *ornatus*, Rüpp. (Somerset); obtained at no other locality by the Challenger.

Batrachus diemensis, Les. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.

Congrogadus subducens, Rich. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.

Mugil waigiensis, Quoy and Gaimard. (Somerset); obtained at no other locality by the Challenger.

Chærops cyanodon, Rich. (Somerset); obtained at no other locality by the Challenger.

„ *ommopterus*, Rich. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.

CAPE YORK

Belone strongylurus, Bleeker. (Somerset); obtained at no other locality by the Challenger.

„ *annulata*, C.V. (Somerset); obtained also at Fiji.

Hemirhamphus quoyi, C.V. (Somerset); obtained at no other locality by the Challenger.

„ *commersoni*, Cuv. (Somerset); obtained also at Fiji.

Chirocentrus dorab, Forsk. (Somerset); obtained at no other locality by the Challenger.

Phyllopteryx taniophorus, Gray. (Station 186, 8 fathoms); obtained at no other locality by the Challenger.

Brachyostoma cultellum, Peters. (North coast of Australia); obtained at no other locality by the Challenger.

In the foregoing list about 570 species of invertebrates and fishes are enumerated, of which 171 are new to science, including representatives of 13 new genera; 140 of the new species and 7 new genera were not obtained elsewhere.

With reference to these shallow-water dredgings, Willemoes-Suhm writes: "In 3 fathoms, off Albany Island, we got a few dead and one living *Trigonia*, several specimens of *Amphioxus*, a specimen of a *Nebalia* apparently undescribed, and other things. In deeper water, 12 fathoms, we got the Comatula, the stomachal sac of which has been described by Lovén as a Cystidean. A black and white striped *Alpheus* seemed to live parasitically on the Comatula, at least it was found attached. There were also a shrimp with *Bopyrus*, a *Stenorhynchus* which, like the *Fistularia*, mimics the sea-weeds, and fine Polyzoa. The Comatulæ were very interesting from the variety of parasites; I looked over eighty specimens and found the following, all black and white:—Ophiurid, *Alpheus*, *Myzostoma* (large species, present on about every tenth individual and never more than three specimens), an Aphroditaceous Annelid, and an Isopod (*Anilocera*) in the stomach."

ORGANISMS FROM THE DEPOSIT.

FORAMINIFERA (Brady, Zool. pt. 22).—The following species of Foraminifera were observed during the examination of the deposit from Station 186, 8 fathoms; there is only one pelagic species (*Globigerina rubra*) present, and it is rare:—

Bulimina ringens (Lamarck).
 „ „ var. *striolata*, Brady.
 „ sp. (?).
Spiroloculina excavata, d'Orbigny.
 „ *limbata*, d'Orbigny.
Miliolina agglutinosa (d'Orbigny)
 „ *alveoliformis*, Brady.
 „ *lanceolata* (d'Orbigny).

Miliolina oblonga (Montagu).
 „ *reticulata* (d'Orbigny).
 „ *rupertiana*, Brady.
 „ *tricarinata* (d'Orbigny).
 „ *trigonula* (Lamarck).
 „ sp. (?).
Articulina sp. (?).
Vertebralina striata, d'Orbigny.

Hauerina circinata, Brady.
 „ *ornatissima* (Karrer).
Planispirina exigua, Brady.
 „ sp. (?).
Peneroplis pertusus (Forskål).
Orbitolites complanata, Lamarck.
Alveolina bosci, Defrance.
Reophax scorpiurus, Montfort.
Textularia agglutinans, d'Orbigny.
 „ „ var. *porrecta*, Brady.
 „ *conica*, d'Orbigny.
 „ *gramen*, d'Orbigny.
 „ sp. (?).
Verneuilina spinulosa, Reuss (?).
Clavulina angularis, d'Orbigny, var. *difformis*, Brady.
 „ *parisiensis*, d'Orbigny.
Bolivina limbata, Brady.

Sagrina raphanus, Parker and Jones
 × *Globigerina rubra*, d'Orbigny.
Discorbina vesicularis (Lamarck).
Planorbulina acervalis, Brady.
Rotalia beccarii (Linné).
 „ *calcar*, d'Orbigny.
 „ *venusta*, Brady.
Gypsina vesicularis (Parker and Jones).
Polystomella craticulata (Fichtel and Moll).
 „ *crispa* (Linné).
 „ *macella* (Fichtel and Moll).
 „ *striatopunctata* (Fichtel and Moll).
 „ *subnodosa* (Münster).
Amphistegina lessonii, d'Orbigny.
Operculina complanata (Defrance), var. *granulosa*,
 Leymerie.
Heterostegina sp. (?).

CAPE YORK.

Surface Organisms.—The following species are recorded from the surface in the vicinity of Cape York :—

ORGANISMS FROM
SURFACE-NETS.

COPEPODA (Brady, Zool. pt. 23).

Eucalanus attenuatus (Dana).
Hemicalanus orientalis, n.sp.
Undina vulgaris, Dana.
 „ *darwini*, Lubbock.
Scolecithrix danæ (Lubbock).
Euchæta prestandrea, Philippi.
Acartia laxa, Dana.
Pontella plumata (Dana).

Oncæa obtusa (Dana).
Saphirina ovalis, Dana.

MACRURA (Spence Bate, Zool. pt. 52).

Sergestes corniculum, Krøyer.
Oodeopus geminidentatus, n.g., n.sp.
 „ *serratus*, n.g., n.sp.
 „ *armatus*, n.g., n.sp.
 „ *intermedius*, n.g., n.sp.
 „ *duplex*, n.g., n.sp.

Stations 188, 189, and 190 (Soundings 320 to 322), Arafura Sea (see Chart 31).

STATIONS 188
TO 190
(ARAFURA SEA).

September 10 to 12, 1874.

At 8.30 A.M. on September 10 shortened and furled sails and brought ship to wind for the purpose of dredging and trawling in 28 to 30 fathoms, deposit composed of sand and shells, containing 38.70 per cent. of carbonate of lime (Station 188). At 1.20 P.M. completed dredging and trawling, many specimens being procured, and made all plain

ARAFURA SEA.

sail. South point of Arrou Islands distant at noon, 366 miles. Made good 134 miles. Amount of current 6 miles, direction W. During the night sounded every two hours, the depths averaging about 30 fathoms, indicating the presence of the submarine plateau which connects New Guinea and North Australia.

At 9.15 A.M. on September 11 shortened and furled sails, brought ship to wind, and put over trawl, which was sent down three times in depths varying between 25 and 29 fathoms, deposit Green Mud, containing 31.13 per cent. of carbonate of lime (Station 189). At 9.30 A.M. lowered whaler to try current. At 11.30 A.M. completed trawling, many specimens being procured, and made sail. The carbonic acid was determined in bottom water, and amounted to 28.7 milligrammes per litre. Distance at noon from Ngor Island, south extremity of the Arrou Islands, 250 miles. Made good 113 miles. Amount of current 10 miles, direction N. 84° W.

At 1.45 P.M. on September 12 shortened sail, brought ship to wind, and put over trawl, which was sent down three times in about 49 fathoms, deposit Green Mud, containing 23.04 per cent. of carbonate of lime (Station 190). Many specimens were obtained, along with a log of wood completely bored by Pholadids. The colour of the water changed during the course of the afternoon from a light greenish-blue to a dark blue. At 5.10 P.M. completed trawling and made sail. In the evening a booby (*Dysporus sula*) came on board the ship. Sea phosphorescent at night. Ngor Island distant at noon, 147 miles. Made good 111 miles. Amount of current 8 miles, direction W.

ANIMALS FROM
DREDGE
AND TRAWL

The following species are recorded in the Zoological Reports from these shallow-water dredgings and trawlings in the Arafura Sea :—

KERATOSA (Poléjaeff, Zool. pt. 31).

Lanthella flabelliformis (Pallas). Two specimens (Station 188); obtained at no other locality by the Challenger.

Cacospongia irregularis, n.sp. One specimen (Station 188); obtained at no other locality.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Rhizochalina fistulosa (Bowerbank). Sixteen specimens (Station 188); obtained also at Station 73 and Bahia (?).

Siderodermia navicelligerum, n.g., n.sp. One specimen (Station 188); obtained at no other locality. Only species of the genus.

Clathria frondifera (Bowerbank). One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Indian and Pacific Oceans.





Echinodictyum rugosum, n.sp. One specimen (Station 190); obtained at no ARAFURA SEA other locality.

Cliona dissimilis, n.sp. One specimen (Station 188, encrusting a Coral—*Turbinaria* sp.); obtained at no other locality.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Disyringa dissimilis (Ridley). (Station 188); obtained also in Torres Strait.

ALCYONARIA (Wright and Studer, Zool. pts. 64 and 81).

Elasmogorgia filiformis, n.g., n.sp. One specimen (Station 188); obtained at no other locality. Only species of the genus.

Muricella umbraticoides, Studer. (Station 190); obtained at no other locality by the Challenger. Recorded from Australia.

„ *crassa*, n.sp. (Station 190); obtained at no other locality.

Melitodes rubeola, n.sp. (Station 190); obtained at no other locality.

„ „ var. nov. (Station 190); obtained at no other locality.

Spongodes corymbosa, n.sp. One specimen (Station 188); obtained at no other locality.

„ *monticulosa*, n.sp. One specimen (Station 188); obtained at no other locality.

Telesto (Carijoa) arborea, n.sp. (Station 190); obtained at no other locality.

Bebryce philippii, n.sp. (Station 190); obtained at no other locality.

ACTINIARIA (Hertwig, Zool. pt. 73).

Sphenopus marsupialis, Steenstrup. One specimen; obtained also at Station 208, 18 fathoms.

CORALS (Moseley, Zool. pt. 7).

Paracyathus de filippii (Duchassaing and Michelotti). One specimen (Station 190); obtained also at Azores.

Flabellum stokesi, M.-Edwards and Haime. Numerous specimens (Stations 188 and 190); obtained at no other locality by the Challenger.

Astræa abyssorum, n.sp. (Station 190); obtained also at Station 192, 129 fathoms.

Dendrophyllia cornigera, Blainville. Many specimens (Station 190); obtained also at Cape Verdes.

REEF CORALS (Quelch, Zool. pt. 46).

Rhodopsammia parallela, Semper. Several specimens (Station 190); obtained also at Philippines.

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HYDROIDEA (Allman, Zool. pt. 20).

Acanthocladium huxleyi (Busk). (Stations 188 and 190); obtained at no other locality by the Challenger. Recorded from "Rattlesnake" Expedition.

CRINOIDEA (Carpenter, Zool. pt. 60).

Antedon elegans, Bell. Four specimens (Station 190); obtained at no other locality by the Challenger. Recorded from Torres Strait.

„ *denticulata*, n.sp. One specimen (Station 190); obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Astropecten granulatus, Müller and Troschel. One specimen (Station 188); obtained at no other locality by the Challenger. Original locality unknown.

Luidia forficifer, n.sp. Two specimens (Station 188); obtained also at Station 187.

Nymphaster symbolicus, n.g., n.sp. (Station 188); obtained also at Stations 192 (var. *breviradiata*) and 204, 100 to 140 fathoms.

Stellaster inaei, Gray. (Station 188); obtained also at Stations 186, 187, and 208.

Pentaceros turritus, Linck. (Station 188); obtained also at Stations 187, 212, and Philippines.

Nepanthia maculata, Gray. One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Migupou.

Rhipidaster vannipes, n.g., n.sp. (Station 188); obtained at no other locality. Only species of the genus.

Retaster insignis, n.sp. (Station 189); obtained also at Station 187.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha kinbergi, Ljungman, (var. ?). (Station 188); obtained also at Stations 161 and 162.

Ophiactis sp. (?). (Station 190).

Ophiacantha discoidea, n.sp. (Station 190); obtained at no other locality.

Amphiura maxima, n.sp. (Station 188); obtained at no other locality.

„ sp. (?). (Arafura Sea).

Ophionereis schayeri (Müller and Troschel) (?). (Arafura Sea); obtained also at Station 162.

Ophiothrix longipeda (Lamarek). (Station 188); for distribution see Tongatabu.

„ *stelligera*, Lyman (?). (Arafura Sea); obtained also at Station 186, Fiji, and Philippines.

- Ophiothrix exigua*, Lyman, (var. ?). (Station 188); obtained also at Station 208, ARAFURA SEA, 18 fathoms.
- „ *melanosticta*, Grube. (Station 190); obtained at no other locality by the Challenger.
- Astrophyton exiguum*, Agassiz. Young specimens (Station 190); obtained also at Station 212, 10 to 20 fathoms.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Phyllacanthus annulifera* (Lamarck). (Station 188); obtained also at Station 186 and Cape York.
- Astropyga pulvinata* (Lamarck). (Stations 188 and 190); obtained also at Sandwich Islands, 18 fathoms.
- Salmacis rarispina*, Agassiz. (Station 188); obtained also at Stations 186 and 203.
- Fibularia volva*, Agassiz. (Station 188); obtained at no other locality by the Challenger.
- Peronella decagonalis* (Lesson). (Stations 188 and 190); for distribution see Station 172.
- Temnopleurus hardwicki* (Gray). (Arafura Sea); obtained also at Station 192 and Japan, 8 to 129 fathoms.
- Laganum depressum*, Lesson. (Arafura Sea); obtained also at Station 187.
- Eupatagus valenciennesii*, Agassiz. (Station 188 and Arafura Sea); obtained also at Port Jackson.
- Lovenia elongata*, Gray. (Station 188); obtained also at Station 212 and Simon's Bay, Cape.
- Brissopsis luzonica* (Gray). (Station 188); obtained also at Stations 168, 191, 203, and 232.
- Metalia maculosa* (Gmelin). (Station 188); obtained at no other locality by the Challenger.
- Schizaster japonicus*, n.sp. (Station 188); obtained also at Hong Kong and Japan, 8 to 50 fathoms.
- Periaster limicola*, n.sp. Two specimens (Station 188); obtained at no other locality by the Challenger. Recorded subsequently from Gulf of Mexico ("Blake").

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

- Synapta insolens*, n.sp. One specimen (Station 188); obtained at no other locality.
- Holothuria martensii*, Semper. One specimen (Station 188); obtained also at Station 203, 20 fathoms. Recorded from Amboina, Celebes, Banda, Banka, and Darnley Islands.

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Holothuria ocellata, Jäger. One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Celebes.

ANNELIDA (M'Intosh, Zool. pt. 34).

Chlocia flava (Pallas). One specimen (Arafura Sea?); obtained also at Station 233B, 15 fathoms. A widely-distributed species.

Nephtys dibranchis, Grube. One specimen (Arafura Sea); obtained at no other locality by the Challenger. Recorded from Arafura Sea.

Nereis (*Platynereis*) *arafurensis*, n.sp. One specimen (Arafura Sea); obtained at no other locality.

Eunice elseyi, Baird (?). Several specimens (Arafura Sea); obtained at no other locality by the Challenger. Recorded from Australia.

Protula arafurensis, n.sp. One specimen (Arafura Sea); obtained at no other locality.

MYZOSTOMIDA (Graff, Zool. pts. 27 and 61).

Myzostoma quadricaudatum, n.sp. (On *Antedon elegans*).

OSTRACODA (Brady, Zool. pt. 3).

Bairdia forcolata, Brady. (Station 189); for distribution see Station 33.

Cythere fungoides (Brady). (Station 189); obtained also at Stations 33 and 187.

„ *euplectella*, Brady. (Station 189); obtained at no other locality by the Challenger. Recorded from Hong Kong.

„ *adunca*, Brady. (Station 189); obtained also at Station 191A, 580 fathoms. Recorded from Java.

„ *relivola*, n.sp. (Station 189); obtained at no other locality.

Cytherella semitalis, Brady. (Station 189); for distribution see Station 187.

„ *cingulata*, Brady. (Station 189); for distribution see Port Jackson.

CIRRIPEDIA (Hoek, Zool. pt. 25).

Balanus socialis, n.sp. A dozen specimens (Station 188, attached to a fruit); obtained at no other locality.

AMPHIPODA (Stebbing, Zool. pt. 67).

Protella gracilis, Dana. One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Balabac Passage.

ISOPODA.

Eight specimens, genera and species undetermined. (Station 190 and Arafura Sea).

STOMATOPODA (Brooks, Zool. pt. 45).

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Squilla quinquedentata, n.sp. One specimen (Station 188); obtained at no other locality.

„ *lata*, n.sp. Three specimens (Station 190); obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Cheramus orientalis, n.g., n.sp. One specimen (Station 188); obtained at no other locality. The only other species of the genus (*Cheramus occidentalis*) was taken at Station 23.

Thenus orientalis, Rumph. One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Indian Ocean.

Arctus tuberculatus, n.sp. Two specimens (Station 190); obtained at no other locality.

Penæus monodon, Fabricius. Two specimens (Station 188); obtained also at Station 203, 20 fathoms. Recorded from India and Japan.

„ *velutinus*, Dana. Sixty-two specimens (Stations 188 and 190); obtained also at Stations 184, 186, 187, and 233.

„ *incisipes*, n.sp. One specimen (Station 190); obtained also at Station 203, 20 fathoms.

„ *anchoralis*, n.sp. Nine specimens (Stations 188 and 190); obtained also at Arrou Islands and Japan.

„ *fissurus*, n.sp. Three specimens (Station 190); obtained also at Stations 204 and 209, 95 to 115 fathoms.

Philonicus (Pleoticus) pectinatus, n.g., n.sp. One specimen (Station 188); obtained at no other locality.

Sicyonia lancifer (Olivier). One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Japan and the Indian Sea.

Pontocaris pennata, n.g., n.sp. Three specimens (Station 190); obtained at no other locality.

Alpheus avarus, Fabricius. (Arafura Sea); for distribution see Station 172.

„ *neptunus*, Dana. (Arafura Sea); obtained at no other locality by the Challenger. Recorded from Fiji and Sooloo Sea.

Nothocaris binocularis, n.g., n.sp. Four specimens (Station 190); obtained at no other locality.

Dorodotes levicarina, n.g., n.sp. Two specimens (Station 188); obtained at no other locality.

Nematocarcinus proximatus, n.sp. Fifteen specimens (Station 188); obtained also at Stations 146, 237, 300, and 302.

ARAFURA SEA.

ANOMURA (Henderson, Zool. pt. 69).

Spiropagurus spiriger (De Haan). Two specimens (Stations 188 and 190); for distribution see Torres Strait.

Pagurodes piliferus, n.g., n.sp. (?). One specimen (Arafura Sea); obtained also at Station 204, 100 to 115 fathoms.

Catapagurus australis, n.sp. One specimen (Station 188); obtained also at Fiji.

Pachycheles pulchellus (Haswell). One specimen (Station 188); obtained also at Station 186.

Galathea australiensis, Stimpson. One specimen (Station 190); obtained at no other locality by the Challenger. Recorded from Port Jackson.

Porcellana serratifrons, Stimpson. One specimen (Arafura Sea); obtained also at Hong Kong, 10 fathoms. Recorded from Hong Kong.

BRACHYURA (Miers, Zool. pt. 49).

Egeria arachnoides (Rumph). Two specimens (Stations 188 and 190); obtained also at Station 212, 10 fathoms. Recorded from Indian, Australian, Malaysian, and Chinese seas.

Oncinopus aranea, De Haan. One specimen (Arafura Sea); obtained also at Station 196 and Port Jackson.

Huenia proteus, De Haan. One specimen (Arafura Sea); obtained also at Station 186.

Macrophthalmus podophthalmus, Eydoux and Souleyet (?). One specimen (Arafura Sea); obtained also in Torres Strait.

Chorilibinia gracilipes, Miers. One specimen (Station 188); obtained also in Torres Strait.

Hyastenus planasius (Adams and White). One specimen (Station 188); obtained at no other locality by the Challenger.

„ *diacanthus* (De Haan). One specimen (Station 190); obtained also at Station 208, 18 fathoms. Recorded from Indo-Pacific region.

Lambrus longimanus (Linné). Four specimens (Station 188); obtained also at Amboina, 100 fathoms. Recorded from Indo-Pacific region.

„ (*Aulacolambrus*) *hoplonotus*, Adams and White, var. *longiocularis*, Miers. One specimen (Station 188); the species obtained also at Station 186 and Torres Strait.

Cryptopodia fornicata (Fabricius). One specimen (Station 188); obtained at no other locality by the Challenger.

Atergatis granulatus, M.-Edwards. One specimen (Station 188); obtained at no other locality by the Challenger.

- Neptunus (Amphitrite) hastatoides* (Fabricius). Five specimens (Station 188); ARAFURA SEA.
obtained also at Hong Kong and Japan, 8 to 50 fathoms.
- „ („) *gladiator* (Fabricius). Two specimens (Station 188);
obtained at no other locality by the Challenger.
- „ (*Achelous*) *whitei* (M.-Edwards). Many specimens (Station 188);
obtained at no other locality by the Challenger.
- Ceratoplax arcuata*, Miers. One specimen (Station 188); obtained at no other
locality by the Challenger. Recorded from Australia.
- Notonyx nitidus*, M.-Edwards. Two specimens (Station 188); obtained at no other
locality by the Challenger. Recorded from New Caledonia and Fiji.
- Myrodes eudactylus*, Bell. One specimen (Station 188); obtained at no other
locality by the Challenger. Recorded from Indo-Malaysia, Australia, and New Caledonia.
- Ebalia lambriiformis* (Bell). One specimen (Station 188); obtained at no
other locality by the Challenger. Recorded from Australia.
- Goniosoma ornatum*, M.-Edwards. Two specimens (Station 190); obtained at no
other locality by the Challenger.
- Myra fugax* (Fabricius). Six specimens (Stations 188 and 190); obtained at no
other locality by the Challenger. Recorded from Indo-Pacific region.
- Leucosia haswelli*, n.sp. One specimen (Station 188); obtained also at Station 212,
10 fathoms.
- „ *ocellata*, Bell. Three specimens (Station 188); obtained at no other
locality by the Challenger.
- „ *whitei*, Bell. One specimen (Station 188); obtained at no other locality
by the Challenger.
- „ *craniolaris* (Linné). Three specimens (Stations 188 and 190); obtained
also at Japan and Hong Kong, 10 to 50 fathoms.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

- Corbula macgillivrayi*, n.sp. (Station 188); obtained at no other locality.
- „ *monilis*, Hinds. (Station 188); obtained also at Stations 186 and 187.
- „ *tunicata*, Hinds. Two specimens (Station 189); obtained also at Port
Jackson and Amboina.
- Myodora* sp. (?). Single valve (Station 188); obtained also at Station 187.

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- Neara elegans*, Hinds. (Station 189); obtained at no other locality by the Challenger. Recorded from New Guinea, Moluccas, Singapore, China Sea, and Japan.
- Semele amabilis*, Adams. One specimen (Station 189); obtained at no other locality by the Challenger. Recorded from Port Curtis.
- Martesia striata* (Linné). (Station 190); obtained at no other locality by the Challenger.
- Solecurtus (Azor) coarctatus* (Gmelin): (Station 188); obtained at no other locality by the Challenger.
- Psammobia pallida*, Deshayes. (Station 188); obtained at no other locality by the Challenger. Recorded from Red Sea, Malacca, and Australia.
- Tellina (Macoma) arafurensis*, n.sp. (Station 190); obtained at no other locality.
- „ (— ?) *tenuilamellata*, n.sp. (Station 188); obtained at no other locality.
- „ (*Angulus*) *lux*, Hanley, var. (Station 189); obtained also in Torres Strait.
- Tapes (Paratapes) semirugata* (Philippi). One specimen (Station 188); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *undulata*, Born. (Station 189); obtained also at Station 233A, 8 to 50 fathoms. Recorded from Japan, China, and Ceylon.
- Venus (Chione) lionota*, n.sp. (Station 188); obtained also at Amboina, 15 to 20 fathoms (var.).
- „ („) *infans*, n.sp. (Station 188); obtained also at Station 187.
- „ („) *foliacea*, Philippi. (Station 189); obtained also at Stations 186 and 187.
- Cytherea (Caryatis) regularis*, n.sp. (Station 188); obtained also in Torres Strait.
- Circe australis*, Sowerby. (Station 188); obtained at no other locality by the Challenger. Recorded from Australia.
- „ *gibbia* (Lamarek): (Station 188); obtained at no other locality by the Challenger. Recorded from Indian Ocean, Philippines, and New Caledonia.
- „ *jucunda*, n.sp. Two valves (Station 188); obtained also at Sandwich Islands, 40 fathoms.
- Dosinia histrio* (Gmelin), var. (Station 189); obtained also at Station 187 and Flinders Passage.
- „ *mira*, n.sp. (Station 189); obtained at no other locality.
- Cardium (Bucardium) multispinosum*, Sowerby. (Stations 188 and 189); obtained at no other locality by the Challenger. Recorded from Philippines and China.
- „ (*Fragum*) *torresi*, n.sp. (Station 188); obtained at no other locality.

- Lucina* (*Codakia*) *seminula*, Gould. (Station 188); obtained at no other locality ARAFURA SEA.
by the Challenger.
- „ („) *pisum*, Reeve. (Station 188); obtained at no other locality by the
Challenger. Recorded from Port Essington and Singapore.
- „ (*Loripes*) *desiderata*, n.sp. (Station 188); obtained at no other locality.
- Diplodonta corpulenta*, n.sp. (Station 188); obtained also at Station 187.
- „ *conspicua*, n.sp. (Station 188); obtained also at Station 187, Flinders
Passage, and Torres Strait.
- Montacuta paula* (Adams). (Station 188); obtained at no other locality by the
Challenger. Recorded from Raine Island and Ceylon.
- Cardita insignis*, n.sp. (Station 188); obtained at no other locality.
- Carditella torresi*, n.sp. (Station 188); obtained also in Torres Strait.
- „ *infans*, n.sp. (Station 188); obtained at no other locality.
- Crassatella rhomboides*, n.sp. (Station 188); obtained also at Station 187.
- „ *torresi*, n.sp. One specimen (Station 188); obtained at no other locality.
- Trigonia uniophora*, Gray. (Stations 188 and 189); obtained also off Albany Island.
- Nucula obliqua*, Lamarck. (Station 188); obtained also in Torres Strait.
- Leda novæ-guineensis*, n.sp. (Station 188); obtained at no other locality.
- „ *corbuloides*, n.sp. (Station 188); obtained at no other locality.
- „ *lata*, Hinds. (Station 189); obtained at no other locality by the Challenger.
- Pectunculus vitreus*, Lamarck. (Station 188); obtained at no other locality by the
Challenger. Recorded from Cape York.
- Arca* (*Scapharca* ?) *consociata*, n.sp. (Station 189); obtained at no other locality.
- Limopsis cancellata* (Reeve). (Station 188); obtained also at Station 186.
- Spondylus victoriæ*, Sowerby. (Station 188); obtained at no other locality by
the Challenger.
- Amussium pleuronectes* (Linné). (Station 188); obtained also at Station 203,
20 fathoms.
- „ *scitulum*, n.sp. (Station 188); obtained at no other locality.
- Ostrea imbricata*, Lamarck. One specimen (Station 188); obtained at no other
locality by the Challenger. Recorded from China and Japan

SCAPHOPODA AND GASTEROPODA (Watson, Zool. pt. 42).

- Dentalium javanum*, Sowerby. (Station 188); obtained also at Station 186
and Torres Strait.
- „ *longitrorsum*, Reeve. (Station 189); obtained at no other locality by
the Challenger. Recorded from Zanzibar and China.
- Adeorbis* sp. (?). (Station 188).
- Cyclostrema*, two species undetermined. (Station 188).

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- Murex* (*Tribulus*) *acanthostephes*, n.sp. (Station 188); obtained at no other locality.
- „ (*Chicoreus*) *cervicornis*, Lamarek. (Station 188); obtained also at Station 187 and Albany Island.
- Nassa* (*Niotha*) *gemmulata* (Lamarek). (Station 188); obtained at no other locality by the Challenger. Recorded from Australia, Philippines, Japan, and Red Sea.
- Ancilla* (*Dipsaccus*) *cingulata* (Sowerby). (Station 188); obtained at no other locality by the Challenger. Recorded from China seas and Australia.
- Marginella* sp. (?). (Station 188).
- Voluta* (*Scaphella*) *turneri*, Gray. (Station 190); obtained at no other locality by the Challenger. Recorded from Australia.
- Pleurotoma speciosa*, Reeve. (Station 190); obtained at no other locality by the Challenger. Recorded from China.
- „ (*Surcula*) *leucotropis*, Adams and Reeve. (Arafura Sea); obtained at no other locality by the Challenger. Recorded from China, Cochin-China, and Japan.
- „ („) *tuberculata*, Gray. (Arafura Sea); obtained also at Hong Kong. Recorded from Japan, China, Saigun, and Java.
- „ (*Drillia*) *laterculata*, Sowerby. (Station 189); obtained at no other locality by the Challenger. Recorded from China Sea.
- Clathurella* (*Daphnella*) *aulacoëssa*, n.sp. (Station 188); obtained at no other locality.
- Terebra polygyrata*, Deshayes. (Station 189); obtained at no other locality by the Challenger. Recorded from Philippines and Australia.
- „ *triseriata*, Gray. (Station 189); obtained at no other locality by the Challenger. Recorded from China, Philippines, and Australia.
- Conus* (*Leptoconus*) *lizardensis*, Crosse. (Stations 189 and 190); obtained at no other locality by the Challenger. Recorded from Australia.
- „ („) *trigonus*, Reeve (?). (Station 190); obtained at no other locality by the Challenger. Recorded from Philippines.
- „ (*Hermes*) *croceus*, Smith (?). (Station 188); obtained at no other locality by the Challenger. Original locality unknown.
- Ranella rana* (Linné). (Stations 188, 189, and 190); obtained also at Station 203 and Amboina. Recorded from Australia, Moluccas, China, and Japan.
- Nassaria sinensis*, Sowerby. (Station 188); obtained also off Albany Island.
- Cassis* (*Semicassis*) *pila*, Reeve. (Station 188); obtained also at Station 203 and Port Jackson.
- Natica atypha*, n.sp. (Station 188); obtained at no other locality.
- „ *rufa* (Born). (Station 190); obtained at no other locality by the Challenger. Recorded from Indian Ocean and Malay Archipelago.

- Xenophora helvacea*, Philippi. (Station 188); obtained at no other locality by the Challenger. Recorded from Madagascar. ARAFURA SEA.
- Turritella cingulifera*, Sowerby. (Station 188); obtained also at Fiji, Torres Strait, and Amboina.
- „ *fastigiata*, Adams and Reeve. (Stations 188 and 189); obtained at no other locality by the Challenger. Recorded from China Sea.
- Odostomia scopulorum*, n.sp. (?). One specimen (Station 188); obtained also at Sandwich Islands, 40 fathoms.
- „ (*Turbonilla*) *rhabdoides*, n.sp. (Station 188); obtained at no other locality.
- „ („) *dipsycha*, n.sp. (Station 188); obtained also in Flinders Passage (var. *incerta*).
- „ , three species undetermined. (Station 188).
- Eulima martinii*, Adams. (Station 188); obtained also in Flinders Passage.
- Triforis dolicha*, n.sp. (Station 188); obtained at no other locality.
- Cithna* (?) sp. (Station 188).
- Rissoa* (*Alvania*) *trajectus*, n.sp. (Station 188); obtained also at Stations 186, 187, Torres Strait, and Flinders Passage.
- „ sp. (?). (Station 188).
- Rissoina miranda* (Adams). (Station 188); obtained at no other locality by the Challenger. Recorded from Japan.
- Skenea* (?), two species undetermined. (Station 188).
- Actæon flammeus* (Gmelin). One specimen (Station 188); obtained also at Station 172 and Fiji.
- Utriculus planospira* (Adams) (?). One specimen (Station 188); obtained also at Station 187.
- „ *complanatus*, n.sp. One specimen (Station 188); obtained at no other locality.
- „ (*Tornatina*) *aratus*, n.sp. (Station 188); obtained at no other locality.

NUDIBRANCHIATA (Bergh, Zool. pt. 26).

- Janolus australis*, n.g., n.sp. One specimen (Arafura Sea); obtained at no other locality. Only species of the genus.
- Bornella excepta*, n.sp. One specimen (Arafura Sea); obtained at no other locality.
- Ohola pacifica*, n.g., n.sp. One specimen (Arafura Sea); obtained at no other locality. Only species of the genus.

CEPHALOPODA (Hoyle, Zool. pt. 44).

- Octopus* sp. (?). One immature specimen (Station 188)

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- Sepia smithi*, n.sp. Four specimens (Station 188); obtained at no other locality.
 „ *papuensis*, n.sp. Two specimens (Station 188); obtained at no other locality.
 „ *elliptica*, n.sp. Eight specimens (Stations 188 and 190); obtained at no other locality.
 „ (*Metasepia*) *pfefferi*, n.sp. One specimen (Station 188); obtained at no other locality.
Loligo indica, Pfeffer. Thirteen specimens (Stations 188 and 190); obtained at no other locality by the Challenger. Recorded from Java.

POLYZOA (Busk, Zool. pts. 30 and 50; Waters, pt. 79).

- Catenicella elegans*, Busk. (Station 188); obtained also at Stations 122, 135, and 163A.
Scrupocellaria ciliata (Audouin). (Station 188); obtained at no other locality by the Challenger. Recorded from Mediterranean (?), Cape Verdes, and Australia.
Nellia oculata, Busk. (Stations 188 and 190); obtained also at Stations 148, 151, 208, and Bahia.
Cuberea lata, Busk. (Station 190); obtained also at Station 186.
Carbasea cribriformis, Busk. (Stations 188 and 190); obtained also at Station 186.
Amathia semispiralis (Kirchenpauer). (Station 188); obtained at no other locality by the Challenger. Recorded from Samoa.
Vesicularia papuensis, n.sp. (Station 188); obtained at no other locality.
Cylindracium papuense, n.sp. (Station 188, parasitic on *Amathia semispiralis*); obtained at no other locality.
Retepora columnifera, n.sp. (Station 190); obtained at no other locality.
 „ *delicatula*, n.sp. (Station 190); obtained at no other locality.
Eschara gracilis, Lamarek. (Station 190); obtained also at Station 162.
Mucronella bisinuata (Smitt). (Station 190); obtained at no other locality by the Challenger. Recorded from Gulf of Florida.
Haswellia australiensis (Haswell). (Station 190); obtained also at Station 186.
 [Waters calls it *Porina coronata*, var. *labrosa*, Reuss].
Adeonella intricaria, n.g., n.sp. (Station 190); obtained at no other locality.

BRACHIOPODA (Davidson, Zool. pt. 1).

- Discina stella*, Gould. Five valves (Station 190); obtained at no other locality by the Challenger. Recorded from Singapore, Philippines, and China seas.

TUNICATA (Herdman, Zool. pt. 17).

- Microcosmus helleri*, n.sp. One specimen (Station 188); obtained at no other locality.

FISHES (Günther, Zool. pts. 6 and 78).

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- Trygon pastinaca*, Linné. (Arafura Sea); obtained also at Japan.
- Serranus diacanthus*, C.V. (Station 189); obtained also at Station 203, 20 fathoms, and Hong Kong.
- Mesoprion annularis*, C.V. (Station 189); obtained at no other locality by the Challenger.
- Apogon monogramma*, n.sp. (Arafura Sea); obtained at no other locality.
- „ *septemstriatus*, n.sp. (Arafura Sea); obtained at no other locality.
- „ *arafuræ*, n.sp. (Arafura Sea); obtained at no other locality.
- Aeropoma japonicum*, Günther (?). (Arafura Sea); obtained at no other locality by the Challenger.
- Priacanthus bennebari*, Schleg. (Arafura Sea); obtained at no other locality by the Challenger.
- Pentapus vitta*, Quoy and Gaimard. (Station 188); obtained at no other locality by the Challenger.
- Pterois lunulata*, Schleg. (= *Pterois volitans*, Linné ?). (Arafura Sea); obtained also at Japan.
- Minous pictus*, n.sp. (Station 188); obtained at no other locality.
- Platycephalus malabaricus*, C.V. (Station 188); obtained at no other locality by the Challenger.
- „ *sculptus*, n.sp. (Arafura Sea); obtained at no other locality.
- Lepidotrigla spiloptera*, n.sp. (Arafura Sea); obtained also at Station 192, 129 fathoms.
- Dactylopterus orientalis*, C.V. (Station 188); obtained at no other locality by the Challenger.
- Champsodon vorax*, Günther. (Arafura Sea); obtained also at Stations 192, 204, and 219, 115 to 152 fathoms.
- Uranoscopus fuscomaculatus*, Steindachner. (Arafura Sea); obtained at no other locality by the Challenger. Recorded from Fiji.
- „ *kaianus*, n.sp. (Station 188); obtained also at Station 192, 129 fathoms.
- Upeneoides* sp. (?). (Arafura Sea).
- Callionymus longicaudatus*, Schleg. (Station 188); obtained at no other locality by the Challenger.
- Tetrabrachium ocellatum*, n.g., n.sp. (Station 188); obtained at no other locality. Only species of the genus.
- Xiphochilus quadrimaculatus*, n.sp. (Arafura Sea); obtained at no other locality.
- Pseudorhombus russelli*, Gray. (Station 190); obtained also at Station 203, 20 fathoms.

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- Rhomboidichthys angustifrons*, n.sp. (Station 188); obtained at no other locality.
- „ *spilurus*, n.sp. (Station 188); obtained also at Philippines.
- Arnoglossus aspilus*, Bleeker. (Station 188); obtained at no other locality by the Challenger.
- Læops parviceps*, n.g., n.sp. (Station 190); obtained also at Station 163A. Only species of the genus.
- Brachypleura novæ-zeelandiæ*, Günther. (Stations 188 and 190); obtained at no other locality by the Challenger.
- Synaptura zebra*, Bl. (Station 190); obtained at no other locality by the Challenger.
- „ *arafurensis*, n.sp. (Station 190); obtained at no other locality.
- Cynoglossus kopsi*, Bleeker. (Station 190); obtained at no other locality by the Challenger.
- Cnidogobius nudiceps*, n.sp. (Arafura Sea); obtained at no other locality.
- Saurus intermedius*, Agassiz. (Arafura Sea); obtained at no other locality by the Challenger. Recorded from Atlantic.
- Saurida grandisquamis*, Günther. (Arafura Sea); obtained at no other locality.
- Monacanthus penicilligerus*, Cuv. (Station 188); obtained at no other locality by the Challenger.
- „ *flicauda*, n.sp. (Station 188); obtained at no other locality.
- Tetrodon nigropunctatus*, Bl. (Station 190); obtained at no other locality by the Challenger.
- Gobius* sp. (?), young. (Station 190, from log of wood in the trawl).

In addition, the Station-book records a large Echiurid.

In the foregoing list 282 species are enumerated, of which 102 are new to science, including representatives of 15 new genera; 75 of the new species and 6 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "The bottom fauna of the Arafura Sea is rather poor; there are no large shells nor Crustacea. Corals and fishes seem to be richly developed, and to have an Indian facies. Among the animals obtained I found a Gephyrean, which was of great interest to me, and the anatomy of which I closely examined. Its total length was 62.5 mm., width 23 mm., length of proboscis 12.5 mm., length of ovaria 15 mm., length of excretory organs 28 mm. The mouth was a sort of pouch formed by the short proboscis, which had a slit with fimbriated edges on its inferior surface. The mouth led into a muscular œsophagus, and this again into a folded intestine, which at its end received two very long excretory organs. The longitudinal muscles were well developed, seven bands being clearly visible externally. On the ventral anterior surface

were two hooks common to all *Echiuri*, but there were none at the posterior end, which was separated from the rest of the body by a ring of larger papillæ, and ended in a point, on which was the anus. The ganglion with nerves going into the anterior portion was clearly visible; there were four ovaria. The animal is closely allied to *Thalassema* as well as to *Echiurus*, holding a median position between those two genera." ARAFURA SEA.

Surface Organisms.—The following species are recorded from the surface of the Arafura Sea :— ORGANISMS FROM SURFACE-NETS.

DIATOMACEÆ.—The following species of Diatoms were observed by Mr. Comber.

<i>Navicula distans</i> , Ralfs.	<i>Hyalodiscus stelliger</i> , Bailey.
„ <i>arenaria</i> , Donkin.	<i>Coscinodiscus excentricus</i> , Ehrenberg.
„ <i>formosa</i> , Gregory.	„ <i>lineatus</i> , Ehrenberg.
„ <i>bombus</i> , Kützing.	„ <i>curvatulus</i> , Grunow.
„ <i>nitescens</i> , Ralfs.	„ „ var. <i>recta</i> , Rattray.
„ <i>aspera</i> , Ehrenberg.	„ <i>normanni</i> , Gregory.
„ „ var. <i>intermedia</i> , Grunow.	„ <i>subtilis</i> , Ehrenberg.
„ „ var. <i>pygmæa</i> (= <i>Stauroneis pygmæa</i> , Castracane).	„ <i>concinus</i> , W. Smith, var. <i>arafurensis</i> , Rattray (= <i>C. papuanus</i> , Castracane).
„ <i>clepsydra</i> , Donkin.	„ <i>concinus</i> , var. <i>jonesiana</i> , Rattray.
<i>Pleurosigma strigosum</i> , W. Smith.	„ <i>radiatus</i> , Ehrenberg.
„ <i>japonicum</i> , Castracane.	„ <i>crassus</i> , Bailey.
„ <i>elegantissimum</i> , Castracane.	„ <i>nodulifer</i> , Janisch.
„ <i>macilentum</i> , Peragallo.	„ <i>oculus-iridis</i> , Ehrenberg.
„ <i>naviculaceum</i> , Brebisson, var. <i>arafurensis</i> , Castracane.	„ <i>nobilis</i> , Grunow.
<i>Amphiprora alata</i> , Kützing.	„ <i>janischii</i> , A. Schmidt, var. <i>arafurensis</i> , Grunow.
<i>Nitzschia constricta</i> , Gregory, and forma <i>parva</i> .	„ <i>gigas</i> , Ehrenberg.
„ <i>mammalis</i> , Castracane.	„ <i>gazellæ</i> , Janisch (= <i>Ethmodiscus</i> sp., Castracane).
„ <i>acuminata</i> , Grunow.	<i>Ethmodiscus tympanum</i> , Castracane.
„ <i>dubia</i> , W. Smith.	<i>Actinopterychus trilingulatus</i> , Greville.
„ <i>socialis</i> , Gregory, var. <i>indica</i> , Castracane.	„ <i>areolatus</i> , A. Schmidt.
„ <i>sigma</i> , W. Smith.	„ <i>undulatus</i> , Ehrenberg.
„ <i>longissima</i> , Ralfs, var. <i>reversa</i> , Grunow.	<i>Aclinocyclus concentricus</i> , Rattray.
<i>Thalassiothrix nitzschiioides</i> , Grunow.	„ <i>complanatus</i> , Castracane.
„ <i>longissima</i> , Cleve and Grunow.	<i>Palmeria hardmaniana</i> , Greville.
„ <i>frauenfeldii</i> , Grunow, var. <i>tenella</i> , Grunow.	<i>Hemiaulus chinensis</i> , Greville, forma <i>excentrica</i> .
<i>Synedra philippinarum</i> , Castracane.	<i>Biddulphia chinensis</i> , Greville.
<i>Surirella fastuosa</i> , Ehrenberg.	„ <i>indica</i> , Roper.
<i>Campylodiscus biangulatus</i> , Greville.	<i>Triceratium distinctum</i> , Janisch.
<i>Cyclotella striata</i> , Grunow, var. <i>baltica</i> , Grunow.	„ <i>scitulum</i> , Brightwell, forma <i>quadrata</i> .
<i>Paralia sulcata</i> , Cleve.	„ <i>muricatum</i> , Brightwell.
<i>Slephanopyxis corona</i> , Grunow.	<i>Bellerophia malleus</i> , Van Heurck (= <i>Triceratium</i> , Brightwell).
„ <i>superba</i> , Grunow.	<i>Eucampia zodiacus</i> , Ehrenberg.
„ <i>palmeriana</i> , Grunow.	„ „ var. <i>nodosa</i> , Grunow.
„ <i>hyalina</i> , Grunow.	

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Melleria cornuta, Cleve.
Lauderia annulata, Cleve.
 „ *moseleyana*, Castracane.
Rhizosolenia robusta, Norman.
 „ *indica*, Peragallo.
 „ *arafurensis*, Castracane.
 „ *striata*, Greville (= *R. imbricata*,
 Brightwell).
 „ *calcar-aris*, Schultze.
 „ *corbula*, Brun.
 „ *styliformis*, Brightwell.
 „ „ var. *polydactyla*, Peragallo.
 „ *temperri*, Peragallo.
 „ *stolterfothii*, Peragallo.
Guinardia flaccida, Peragallo (= *Rhizosolenia*,
 Castracane).
Cerataulina bergonii, Peragallo.

Chaetoceros boreale, Bailey.
 „ *peruvianum*, Brightwell.
 „ *lorenzianum*, Cleve.
 „ *coarctatum*, Lauder.
 „ *diversum*, Cleve.
 „ *incisor*, Ralfs.
 „ *protuberans*, Lauder.
 „ *javanicum*, Cleve.
 „ *secundum*, Cleve.
 „ *compressum*, Lauder.
 „ *distans*, Cleve.
 „ sp. (?).

Bacteriastrum varians, Lauder (incl. *B. spirillum*,
 Castracane).
 „ *wallichii*, Ralfs, var. *hispida*,
 Castracane.
 „ *brevispinum*, Castracane.

COPEPODA (Brady, Zool. pt. 23).

Calanus valgus, n.sp.
Eucalanus setiger, n.sp.
Undina vulgaris, Dana.
Euchaeta prestandreae, Philippi.
Temora dubia (Lubbock).
Centropages furcatus (Dana).
Pontella acuta (Dana).
 „ *kröyeri*, n.sp.

AMPHIPODA (Stebbing, Zool. pt. 67).

Tetrathyrus arafuræ, n.sp.
Amphithyrus sp. (?).

SCHIZOPODA (Saes, Zool. pt. 37).

Euphausia latifrons, n.sp.
Siriella gracilis, Dana.

MACRURA (Spence Bate, Zool. pt. 52).

Lucifer typus, Thompson.
 „ *reynaudii*, M.-Edwards.

PTEROPODA (Pelsencer, Zool. pt. 65).

Clio (Creseis) acicula (Rang).

The tow-nets were filled with a yellowish slime, which proved to be a mass of Diatoms, having the same general aspect as those obtained on March 3, 1874, towards the Antarctic, but the species were different; *Rhizosolenia* was the most abundant. The Diatoms were sometimes massed together, looking like some of the compound Radiolaria; one jelly-mass observed seemed to be covered with small cylindrical forms, containing inside of these two or three lanceolate or fusiform varieties, which exhibited motions. The masses were of a brown-green colour, and were sufficiently numerous to colour the water to some extent. Many of the Diatoms had attached to them *Epistylis*, *Carchesium*, and *Vorticella* with contractile threads, *Stentor* sessile on the large forms, all living and very beautiful under the microscope. *Rhizosolenia* became less plentiful, and species of *Coscinodiscus* more abundant, on approaching the Arrou Islands, and

organisms indicative of oceanic conditions increased in number. The sea was covered in many places by long broad lines and patches of Oscillatoriaceæ (*Trichodesmium*?), which evidently did not extend much below the surface, not being taken by the tow-net when dragged under the surface. There was a smell from the patches as from a weedy pond. The patches were of a brown or reddish colour, and the threads in some species were arranged in bundles and in other species in round patches. Oscillatoriaceæ had not previously been met with in such abundance. A few specimens of *Pyrocystis*, many specimens of *Peridinium*, and a very elegant organism like it, were also present, and in addition the following were observed :—*Acanthometra*, *Diphyes*, *Rhizostoma*, and other jelly-fishes, larvæ of *Chirodota*, *Sagitta*, larval Annelid with tube, Copepods, *Lucifer*, Zoëæ, and other Crustacea, larval Gasteropods, *Atlanta*, *Styliola*, *Heterofusus* [= *Limacina*], *Theceurybia* [= *Halopsyche*] *gaudichaudi*, larval Pteropods, *Salpa*, *Appendicularia*, and fishes. Sharks, dolphins with pointed noses, porpoises, and a turtle were seen alongside the ship. The porpoises were in great abundance about the ship on September 13; they had a high falcate back fin placed about the middle of the body, blunt snout, and black colour, the belly not being conspicuously lighter in colour. The animals frequently swam in pairs close beside one another. A frigate bird was seen hovering over a shoal of the porpoises, apparently trying to pick up disabled fish.

The surface animals of the Arafura Sea are very slightly pelagic in their characters, being more like those of some bay or harbour. It may be noted that one living *Rotalia* was taken in the tow-net, but not a single specimen of *Globigerina*, *Orbulina*, *Pulvinulina*, or other pelagic Foraminifera was taken in the tow-nets while crossing the Arafura Sea, although these were never absent from the nets in the open ocean.

The Challenger remained at the Arrou Islands from September 14 till September 23, 1874 (for description of the islands see *Narr. Chall. Exp.*, vol. i. pp. 545–552). The following species are recorded in the Zoological Reports as having been obtained in shallow water and on shore at the Arrou Islands :—

CRINOIDEA (Carpenter, Zool. pt. 60).

Antedon variipinna, Carpenter. Two specimens; obtained also at Station 186.

Actinometra paucicirra, Bell. Three specimens; obtained also at Station 187 and Cape York.

AT ARROU
ISLANDS.

ANIMALS FROM
ARROU ISLANDS.

ENTOZOA (Linstow, Zool. pt. 71).

Filaria flabellata, n.sp. Several specimens (parasitic in *Paradisea apoda*).

„ *paradiseæ*, n.sp. One specimen (parasitic in *Paradisea apoda*).

ANNELIDA (M'Intosh, Zool. pt. 34).

Glycera sagittariæ, n.sp. One specimen; obtained at no other locality.

AEROU ISLANDS. MACRURA (Spence Bate, Zool. pt. 52).

Penaeus anchoralis, n.sp. One specimen; obtained also at Stations 188, 190, and Japan.

ANOMURA (Henderson, Zool. pt. 69).

Canobita rugosa, M.-Edwards. (Shore); for distribution see Fiji.

BRACHYURA (Miers, Zool. pt. 49).

Ceratocarcinus longimanus, Adams and White. One specimen; obtained at no other locality by the Challenger. Recorded from Borneo and Balambangan.

Neptunus (Amphitrite) tuberculosus, M.-Edwards. One specimen; obtained at no other locality by the Challenger.

Ocypoda ceratophthalma (Pallas). Several specimens; for distribution see Fiji.

Gelasimus vocans (Linné). One specimen; obtained also at Fiji.

„ *tetragonon* (Herbst). Three specimens; obtained also at Tahiti.

Grapsus strigosus (Herbst). One specimen; obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.

Sesarma (Holometopus) aubryi, M.-Edwards. One specimen; obtained also at New Hebrides and Admiralty Islands.

GASTEROPODA (Watson, Zool. pt. 42).

Trochus (Ziziphinus) arriensis, n.sp. Obtained at no other locality.

Nassa (Niotha) sordida, Adams. Obtained at no other locality by the Challenger. Recorded from Philippines.

Phos roseatus, Hinds. Obtained also at Stations 208 and 212, 10 to 20 fathoms. Recorded from Indian and Pacific Oceans.

„ *senticosus* (Linné). Obtained at no other locality by the Challenger. Recorded from Philippines and Andamans.

Oliva (Galeola) picta, Reeve. Obtained also at Station 172 and Amboina.

Mitra (Cancilla) interlirata, Reeve (?). Obtained also at Stations 172, 185, and Fiji.

„ (*Costellaria*) *sculptilis*, Reeve. Obtained also at Cape York.

Ranella margaritula, Deshayes. Obtained also at Station 208, 18 fathoms. Recorded from East Indies.

Strombus sp. (?).

Cerithium (Vertagus) articulatum, Adams and Reeve. Obtained also at Station 187.

„ („) *kochi*, Philippi. Obtained also at Amboina. Recorded from Indian and Pacific Oceans.

HETEROPODA (Smith, Zool. pt. 72).

ARROU ISLANDS.

Cardiopoda placenta (Lesson). Obtained at no other locality by the Challenger.
Recorded from Pacific and Atlantic Oceans.

TUNICATA (Herdman, Zool. pt. 38).

Diplosomoides molle, n.g., n.sp. One specimen; obtained at no other locality.

In the foregoing list 27 species are enumerated, of which 6 are new to science, including representative of 1 new genus; 5 of the new species were not obtained elsewhere.

Surface Organisms.—The following are recorded in the note-books as having been taken in the tow-nets in the neighbourhood of the Arrou Islands:—Diatoms of various forms, *Vorticella* abundant on the Diatoms, *Pyrocystis*, *Peridinium*, Oscillatoriaceæ, small *Globigerina* with spines (the first taken in the tow-net since leaving Raine Island), *Acanthometra*, *Diphyes*, Echinoderm larvæ, *Sagitta*, *Cypridina*, *Saphirina* and other Copepods, Hyperids, *Thysanopoda*, *Lucifer* in immense numbers, Zoëæ and other larval Crustacea, small Lamellibranch and other shells, *Atlanta*, *Styliola* and other Pteropods, *Salpa*, *Appendicularia*, and many fish eggs. Shoals of fishes were seen, and *Rhizostoma* and other jelly-fish were observed floating past the ship.

ORGANISMS FROM
SURFACE-NETS.

Station 191 (Sounding 323), Arrou Islands to Banda (see Charts 31 and 32, STATION 191. and Diagram 14).

September 23, 1874; lat. 5° 41' S., long. 134° 4' 30" E.

Temperature of air at noon, 81°·8; mean for the day, 80°·1.

Temperature of water:—

Surface, ...	82·2	500 fathoms, ...	41·5
100 fathoms, ...	67·5	600 „	40·5
200 „	51·5	700 „	39·8
300 „	46·0	Bottom, ...	39·5
400 „	43·2		

Density at 60° F. at surface, 1·02496.

Depth, 800 fathoms; deposit, Green Mud, containing 13·95 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 5 A.M. got up steam. At 7.30 A.M. weighed anchor and proceeded under steam out of Dobbo Harbour. At 9.30 A.M. sounded in 48 fathoms. At 10.10 A.M. stopped

STATION 191

and sounded in 800 fathoms off Wamma Island. Put trawl over. At 1 P.M. obtained serial temperatures down to the bottom. At 5.20 P.M. hove up trawl containing many specimens, worm-tubes, and pieces of wood. At 5.40 P.M. made sail, and shaped course towards the Ki Islands.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

CORALS (Moseley, Zool. pt. 7).

Deltocyathus italicus, M.-Edwards and Haime (?). One specimen; for distribution see Station 24.

ASTEROIDEA (Sladen, Zool. pt. 51).

Pontaster mimicus, n.g., n.sp. Obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator").

Dytaster æquivocus, n.g., n.sp. Obtained at no other locality.

Porcellanaster caulifer, n.g., n.sp. Obtained at no other locality.

Porania spiculata, n.sp. One specimen; obtained also at Stations 150 and 151.

Cnemidaster wyvillii, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Asterias resiculosa, n.sp. Obtained at no other locality.

Labidiaster annulatus, n.sp. One specimen; obtained also at Stations 149, 150, and 151.

OPHIOIDEA (Lyman, Zool. pt. 14).

Pectinura heros, n.sp. Obtained at no other locality.

Ophiomusium lymani, Wyville Thomson. For distribution see Station 45.

Ophiactis sp. (?), (young).

Amphiura concolor, n.sp. Obtained also at Station 195, 1425 fathoms.

Ophiochiton fastigatus, n.g., n.sp. Obtained also at Station 232, 345 fathoms.

Ophiacantha cosmica, n.sp. For distribution see Station 122.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Phormosoma luculentum, n.sp. Obtained also at Stations 200 and 205, 255 and 1050 fathoms.

Pourtalesia laguncula, n.sp. Obtained also at Stations 168, 169, 232, and 244.

Argopagetus vitreus, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Maretia alta, Agassiz. Obtained also at Station 192, 129 fathoms.

STATION 191.

Hemiaster gibbosus, n.sp. Obtained also at Station 232, 345 fathoms.

Cionobrissus revinctus, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Brissopsis luzonica (Gray). Obtained also at Stations 168, 188, 203, and 232.

Aërope rostrata, Wyville Thomson, n.g., n.sp. Obtained also off coast of Portugal. Only species of the genus.

SCHIZOPODA (Sars, Zool. pt. 37).

Gnathophausia ingens (Dohrn). One specimen; obtained at no other locality by the Challenger. Recorded from African coast.

„ *calcarata*, n.g., n.sp. One specimen; obtained also at Station 214, 500 fathoms.

MACRURA (Spence Bate, Zool. pt. 52).

Phoberus tenuimanus, n.sp. One specimen; obtained at no other locality.

Nephropsis suhni, n.sp. One specimen; obtained at no other locality.

Haliporus neptunus, n.g., n.sp. Two specimens; obtained also at Station 196, 825 fathoms. Recorded subsequently from Indian Ocean ("Investigator").

Merhippolyte orientalis, n.g., n.sp. One specimen; obtained at no other locality.

Acanthephyra acutifrons, n.sp. One specimen; obtained also at Stations 213 and 214, 2050 and 500 fathoms.

Proclestes biangulatus, n.g., n.sp. One specimen; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Munidopsis brevimana, n.sp. One specimen; obtained also at Station 218, 1070 fathoms.

BRACHYURA (Miers, Zool. pt. 49).

Ethusa (*Ethusina*) *gracilipes*, n.sp., var. *robusta*, nov. Three specimens; obtained also at Station 195, 1425 fathoms. The species was taken at Station 207, 700 fathoms.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Nucula sp. (?). Single valve.

Malletia arroana, n.sp. Obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator") (?).

Modiola watsoni, n.sp. Obtained also at Station 207, 700 fathoms.

STATION 191.

GASTEROPODA (Watson, Zool. pt. 42).

Pleurotoma (*Typhlomangelia*) *paupera*, n.sp. Obtained at no other locality.

„ (*Spirotropis*) *brachytoma*, n.sp. Obtained at no other locality.

Natica (*Amauropsis*) *apora*, n.sp. Obtained also at Station 169 (?).

Scaphander mundus, n.sp. Obtained at no other locality.

FISHES (Günther, Zool. pt. 57).

Melamphaës mizolepis, n.sp. One specimen; obtained at no other locality.

Recorded subsequently from Indian Ocean ("Investigator").

Genostoma elongatum, n.sp. One specimen; obtained also at Station 194A, 360 fathoms. Recorded subsequently from Indian Ocean ("Investigator").

Chauliodus sloanii, Bl. Schn. One specimen; obtained also at Stations 60, 104, 216A, and 235.

In addition to the foregoing, the Station-book records a *Sternaspis*.

Excluding Protozoa, over 50 specimens of invertebrates and fishes were obtained at this Station, belonging to 43 species, of which 34 are new to science, including representatives of 12 new genera; 17 of the new species and 3 new genera were not obtained elsewhere.

It was observed that the stomach and intestines of all the Echini were filled with mud, quite the same as the top layer procured in the sounding-tube.

Willemoes-Suhm writes: "The *Gnathophausia* taken to-day is very like *Gnathophausia gigas*, the first species we obtained between Bermuda and the Azores. The male differs from that species in many points, but only a very small specimen was obtained, and the carapace of the female was soft and out of shape, as the animal had just been moulting. There was another small Decapod [= *Nephropsis sulmi*] differing from the Astacidae in the absence of the outer antennal scale and of the flagellum, and from the Palinuridae in the presence of three pairs of chelae,—a very interesting form intermediate between those two families, which we have already taken in 700 fathoms, off Bermuda, and which I called in my notes *Nitocris* [= *Nephropsis*] *rosea*. A large Astacid seemed to be most closely allied to *Nephrops* differing apparently only in the rudimentary condition of the eyes, which were situated underneath the rostrum. The stalk was very short, and there was only a trace of an optical apparatus at the end on the inferior surface; there were some hairs at the end of the stalk."

Surface Organisms.—The following species is recorded from the surface at this Station 191.
Station :—

ORGANISMS FROM
SURFACE-NETS.

FISHES (Günther, Zool. pt. 78).

Psenes arafurensis, n.sp.

In addition, the following are recorded in the note-books :—*Peridinium* abundant, very few Diatoms, a few Oscillatoriaceæ, *Orbulina*, *Diphyes* and other Siphonophoræ, *Sagitta*, *Saphirina*, *Hyperia*, *Lucifer*, and other Crustacea, small Lamellibranch shells, Heteropods (*Cardiopoda placenta*), several species of Pteropods and larvæ, including *Theceurybia* [= *Halopsyche*], several species of *Salpa*, *Appendicularia*, and small fishes.

Station 191A (Sounding 324), Arrou Islands to Banda (see Charts 31 and 32, and Station 191A. Diagram 14).

September 24, 1874 ; lat. 5° 26' S., long. 133° 19' E.

Temperature of air at noon, 82°·8 ; mean for the day, 81°·1.

Temperature of water :—

Surface, ...	81·5	125 fathoms, ...	63·0
25 fathoms, ...	80·0	150 „	59·0
50 „	75·5	175 „	54·7
75 „	71·5	200 „	51·5
100 „	67·5	Bottom, ...	40·7

Density at 60° F. at surface, 1·02579 ; bottom, 1·02581.

Depth, 580 fathoms ; deposit, Green Mud, containing 40·20 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At daylight observed land ahead. Got up steam. At 6 A.M. sounded in 580 fathoms. Obtained serial temperatures at intervals of 25 fathoms down to 200 fathoms. At 7.30 A.M. completed observations and made all plain sail. At 9.30 A.M. observed native proas pulling for ship and coming alongside, with inhabitants of the island of Great Ki. At 11.45 A.M. got up steam, and sounded in 100 fathoms, no bottom. At 12.20 P.M. proceeded under steam. Rounded the north end of Great Ki Island. At 2.30 P.M. shortened and furled sails. Observed Little Ki Island ahead. At 6.30 P.M. stopped and anchored in 7 fathoms off the island. Native boats came alongside with flags flying, and to the sound of the native drum. Later in the evening the natives performed various dances on the upper deck. Exhibited blue lights for their amusement.

STATION 191A.
ORGANISMS FROM
THE DEPOSIT.

OSTRACODA (Brady, Zool. pt. 3).—The following species were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.) :—

Macrocypris sp. (?).

Bairdia formosa, Brady (?). Obtained also at Stations 76, 120, and 122.

Cythere adunca, Brady. Obtained also at Station 189.

„ *dietyon*, n.sp. Widely distributed (see Station 24).

„ *radula*, n.sp. Single valve; obtained at no other locality.

„ *acanthoderma*, n.sp. Widely distributed (see Station 64).

„ *dasyderma*, n.sp. Widely distributed (see Station 5).

Krihe bartonensis (Jones). Obtained also at Station 149.

Cytherideis sp. (?).

Cytherella lata, n.sp. Obtained also at Stations 24, 75, 120, and 185.

„ *punctata*, Brady. Obtained also at Stations 135, 167, 305, and Port Jackson.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following are recorded in the note-books :—*Peridinium*, *Pyrocystis*, *Globigerina*, *Pulvinulina menardii* (observed for the first time since leaving Raine Island), *Acanthometra* and other Radiolaria, *Saphirina* and other Copepods, *Hyperia*, *Lucifer*, and other Crustaceans, *Atlanta*, *Hyalæa* [= *Cavolinia*], *Styliola*, and other small shells, *Salpa*, and *Appendicularia*. Altogether the organisms from the tow-net were more oceanic in character than observed since leaving the outside edge of the Great Barrier Reef of Australia.

STATION 192.

Station 192 (Sounding 325), Arrou Islands to Banda (see Chart 32).

September 26, 1874; lat. 5° 49' 15" S., long. 132° 14' 15" E.

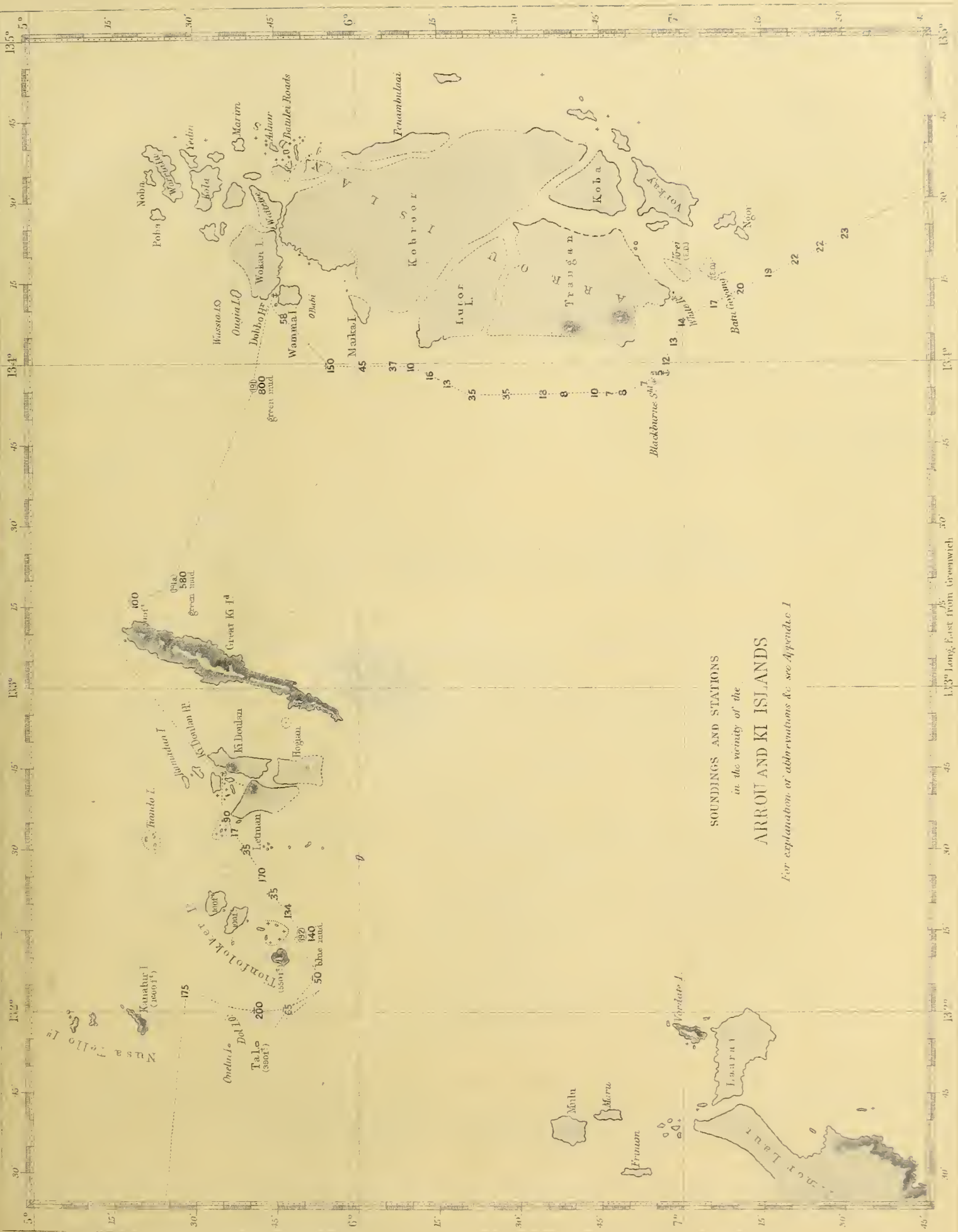
Temperature of air at noon, 83°·3; mean for the day, 80°·3.

Temperature of water at surface, 82°·0.

Density at 60° F. at surface, 1·02585.

Depth, 140 and 129 fathoms; deposit, Blue Mud, containing 8·30 per cent. of carbonate of lime, with large pieces of honeycombed *Globigerina* rock, containing 79·56 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 5 A.M. got up steam. At 6.30 A.M. weighed anchor and proceeded out of Ki Doulan Harbour. Observed several islands to the west not marked in the chart. At noon sounded in 90, 17, and 170 fathoms. Proceeded S.W. by W. and at 2 P.M. stopped and sounded in 134 fathoms. At 3.30 P.M. stopped and sounded in 129 fathoms, and obtained two hauls with the trawl in 129 to 140 fathoms with the most satisfactory





results. At 7.30 P.M. made sail. At 8 P.M. stopped and sounded in 50 fathoms, no bottom. At midnight observed the Three Brothers Islands about three or four miles ahead. Sounded in 65 fathoms, no bottom. The numerous islands which came in sight during this day presented the same appearance as previously noticed at the Arrou and Ki Islands—mostly low and flat—some hilly, but all covered with abundant vegetation from the shore to the summit. Whilst some of these islands were altogether omitted on the chart, the position of others seemed to be incorrectly laid down—a condition of affairs now put an end to by the careful observations of the surveying officers during this day's cruise. While trawling, a number of small birds (*Thalassidroma*) were observed some distance from the ship, also several frigate birds and one or two gulls.

STATION 192.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

ANIMALS FROM
TRAWL.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Esperiopsis pulchella, n.sp. One specimen; obtained at no other locality.

Myxilla paucispinata, n.sp. Two fragments; obtained at no other locality.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Triptolemus cladosus, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Cydonium hirsutus, n.sp. Two specimens; obtained at no other locality.

Discodermia panoplia, n.sp. One specimen; obtained at no other locality.

Corallistes thomasi, n.sp. One specimen; obtained at no other locality.

Callipelta ornata, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

Scleritoderma flabelliformis, n.sp. Five specimens; obtained at no other locality.

Siphonidium capitatum, n.sp. Three specimens; obtained at no other locality.

Azorica marginata, n.sp. One specimen; obtained at no other locality.

Tretolophus paniceus, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Epallax callocyathus, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

Dorypleres dendyi, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Lanuginella pupa, Schmidt. Several specimens; obtained at no other locality by the Challenger. Recorded from Cape Verdes.

STATION 192.

Polylophus philippinensis (Gray). Several specimens; obtained also at Station 209, 95 fathoms.

Crateromorpha thierfelderi, n.sp. One specimen; obtained at no other locality.

„ *murrayi*, n.sp. One specimen; obtained at no other locality.

Pheronema globosum, n.sp. Five specimens; obtained at no other locality.

„ *giganteum*, n.sp. One specimen; obtained at no other locality.

Semperella schultzei, Semper. One specimen; obtained also at Station 209, 95 fathoms.

Eurete semperi, n.sp. One specimen; obtained at no other locality.

„ *farreopsis*, Carter. One specimen; obtained at no other locality by the Challenger. Recorded from Philippines.

„ *carteri*, n.sp. One specimen; obtained at no other locality. Recorded subsequently from Japan.

„ *marshalli*, n.sp. Two specimens; obtained at no other locality.

Hexactinella lata, n.sp. A few specimens; obtained at no other locality.

Cyrtaulon solutus, n.g., n.sp. One specimen; obtained at no other locality.

Fieldingia lagettoides, Kent. Two specimens; obtained at no other locality by the Challenger. Recorded from coast of Portugal.

Myliusia callocyathus, Gray. Three specimens; obtained also at Stations 24 and 194.

Aulocystis zittelii (Marshall). Two specimens; obtained also at Station 194A, 360 fathoms.

Euretid, two specimens.

Dictyonine, one specimen.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Dasygorgia cypressa, n.sp. Three specimens; obtained at no other locality.

Thouarella hilgendorfi (Studer). Several specimens; obtained at no other locality by the Challenger. Recorded from Japan.

Caligorgia sertosa, n.sp. One specimen; obtained at no other locality.

Muricella tenera, Ridley. One specimen; obtained at no other locality by the Challenger. Recorded from Australia.

Parisis fruticosa, Verrill. One specimen; obtained at no other locality by the Challenger. Recorded from Sulu Sea.

Pleurocorallium secundum, Dana. One specimen; obtained also at Stations 145 and 194.

Spongodes collaris, n.sp. Several specimens; obtained at no other locality.

„ *laxa*, n.sp. One specimen; obtained at no other locality.

„ *rhodosticta*, n.sp. Two specimens; obtained at no other locality.

PENNATULIDA (Köl liker, Zool. pt. 2).

STATION 192.

Pennatula murrayi, n.sp. One specimen; obtained at no other locality.*Stachyptilum macleari*, n.g., n.sp. One specimen; obtained at no other locality.

Only species of the genus.

Trichoptilum brunneum, n.g., n.sp. One specimen; obtained at no other locality.

Only species of the genus.

ANTIPATHARIA (Brook, Zool. pt. 80).

Aphanipathes cancellata, n.g., n.sp. Two specimens; obtained at no other locality.[*Antipathes*] *cylindrica*, n.sp. Two specimens; obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Caryophyllia clavus, Scacchi, var. *borealis*, Duncan (?). One specimen; obtained at no other locality by the Challenger.,, ,, ,, var. *transversalis*, nov. Five specimens; obtained at no other locality.

Other varieties obtained at Stations 75, 219, and 308.

,, *rugosa*, n.sp. Six specimens; obtained also at Station 201 (?), 102 fathoms.*Deltocyathus magnificus*, n.sp. Two specimens; obtained at no other locality.*Cyathoceras rubescens*, n.g., n.sp. One specimen and fragment; obtained at no other locality. The only other species of the genus (*Cyathoceras cornu*) was taken at Stations 163 and 320.*Sphenotrochus rubescens*, n.sp. Four specimens; obtained at no other locality.*Flabellum patens*, n.sp. Six specimens; obtained at no other locality.*Astræa abyssorum*, n.sp. Obtained also at Station 190.*Balanophyllia malaccensis*, Kent. One specimen; obtained also at Station 201 (?), 102 fathoms.,, *cornu*, n.sp. Three specimens; obtained at no other locality.,, *rediviva*, n.sp. Four specimens; obtained at no other locality.*Stephanophyllia complicata*, n.sp. Two specimens; obtained at no other locality.,, *formosissima*, n.sp. Three specimens; obtained also at Station 209, 95 fathoms.

CRINOIDEA (Carpenter, Zool. pts. 32 and 60).

Metacrinus angulatus, n.g., n.sp. Seven specimens; obtained at no other locality.,, *cingulatus*, n.g., n.sp. Two specimens; obtained at no other locality.,, *murrayi*, n.g., n.sp. One specimen (doubtful whether from Station 192, 210, or 214).

STATION 192.

- Metacrinus nobilis*, n.g., n.sp. Three specimens; obtained at no other locality.
 „ *tuberosus*, n.g., n.sp. Stem fragment; obtained at no other locality.
Antedon longicirri, n.sp. One specimen; obtained at no other locality.
 „ *parvipinna*, n.sp. One specimen; obtained at no other locality.
 „ *pusilla*, n.sp. One specimen; obtained at no other locality.
 „ *discoidea*, n.sp. Four specimens; obtained at no other locality.
 „ *quinquecostata*, n.sp. Ten specimens; obtained at no other locality.
 „ *flexilis*, n.sp. Four specimens; obtained at no other locality.
 „ *patula*, n.sp. Two specimens; obtained at no other locality.
 „ *robusta*, n.sp. One specimen; obtained at no other locality.
 „ *compressa*, n.sp. Two specimens; obtained also at Station 201, 82 fathoms.
 „ *manca*, n.sp. One specimen; obtained at no other locality.
 „ *angustiradia*, n.sp. One specimen; obtained at no other locality.
Actinometra pulchella (Poutalès)(?). One specimen; obtained also at St. Paul's Rocks.

ASTEROIDEA (Sladen, Zool. pt. 51).

- Pontaster teres*, n.g., n.sp. Obtained at no other locality.
Astropecten acanthifer, n.sp. Obtained at no other locality.
Nymphaster symbolicus, n.g., n.sp., var. *breviradiata*, nov. The species obtained also at Stations 188 and 204.
Paragonaster ctenipes, n.g., n.sp. Obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator") (?).
Pholidaster distinctus, n.g., n.sp. Obtained at no other locality.

OPHUROIDEA (Lyman, Zool. pt. 14).

- Ophioceramis* (?) *obstricta*, n.sp. Obtained at no other locality.
Ophioglypha solida, n.sp. Obtained at no other locality.
Ophiomusium laqueatum, n.sp. Obtained at no other locality.
 „ *lütkeni*, n.sp. Obtained at no other locality.
Ophiacantha valenciennesi, n.sp. Obtained at no other locality.
Ophiocamax vitrea, n.g., n.sp. Obtained also at Stations 201, 204, 209, and 219, 95 to 150 fathoms.
Ophiothrix berberis, n.sp. Obtained also at Station 209, 95 to 100 fathoms.
Astroclon propugnatoris, n.g., n.sp. One specimen; obtained at no other locality.
 Only species of the genus.
Astroschema tumidum, n.sp. Obtained at no other locality.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Goniocidaris florigera*, n.sp. Obtained also at Station 204, 100 to 115 fathoms.

Cælopleurus maillardi (Michelin). Obtained also at Station 201 and Amboina, STATION 192.

82 to 102 fathoms.

Asthenosoma pellucidum, n.sp. Obtained also at Station 209, 100 fathoms.

Temnopleurus hardwicki (Gray). Obtained also at Japan and Arafura Sea.

„ *reynaudi*, Agassiz. Obtained also at Stations 166 and 219.

Peronella decagonalis (Lesson). For distribution see Station 172.

Echinolampas oviformis (Gmelin). One specimen; obtained at no other locality by the Challenger.

Catopygus recens, n.sp. Obtained at no other locality.

Maretia alta, Agassiz. Obtained also at Station 191.

Moiropsis claudicans, n.g., n.sp. Obtained at no other locality. Only species of the genus.

HOLOTHURIOIDEA (Théel, Zool. pts. 13 and 39).

Ilyodæmon maculatus, n.g., n.sp. Two specimens; obtained also at Stations 209 and 219, 95 to 150 fathoms. Only species of the genus.

Chirodota sp. (?). Several fragmentary specimens.

ANNELIDA (M'Intosh, Zool. pt. 34).

Syllis ramosa, n.sp. Obtained also at Station 209, 95 fathoms.

MYZOSTOMIDA (Graff, Zool. pts. 27 and 61).

Myzostoma wyville-thomsoni, n.sp. (On *Metacrinus angulatus*).

„ *folium*, n.sp. (On *Antedon manca*).

„ *inflator*, n.sp. (On *Antedon angustiradia*).

„ *murrayi*, n.sp. (On *Antedon angustiradia*).

„ *willemoesii*, n.sp. (On *Antedon flexilis*).

„ *beardi*, n.sp. (On *Antedon flexilis*).

CIRRIPEDIA (Hoek, Zool. pt. 25).

Lepas anserifera, Linné. Several specimens (on branch of tree); widely distributed in Atlantic and Pacific Oceans.

Scalpellum indicum, n.sp. One specimen; obtained at no other locality.

„ *balanoides*, n.sp. Several specimens; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Ibaccus brevipes, n.sp. One specimen; obtained at no other locality.

Arctus sordidus, Stimpson. Three specimens; obtained at no other locality by the Challenger. Recorded from Hong Kong.

STATION 192.

Penaeus philippinensis, n.sp. Two specimens; obtained also at Stations 201 and 219, 82 and 150 fathoms. Recorded subsequently from Indian Ocean ("Investigator") (var.).

Philonicus (Pleoticus) lucasii, n.g., n.sp. One specimen; obtained at no other locality.

Pontocaris propensalata, n.g., n.sp. One specimen; obtained at no other locality.

Nothocaris rostricrescentis, n.g., n.sp. One specimen; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Homola orientalis, n.sp. One specimen; obtained also at Station 209, 95 fathoms.

Notopoides latus, n.g., n.sp. Many specimens; obtained at no other locality.

Only species of the genus.

Notopus ovalis, n.sp. One specimen; obtained at no other locality.

Clibanarius (?) sp. Carapace only.

Munida scabra, n.sp. Fifteen specimens; obtained at no other locality.

„ *militaris*, n.sp. Two specimens; obtained also at Stations 173, 200, 210, and Amboina.

Eumunida smithii, n.sp. One specimen; obtained at no other locality.

Ptychogaster laevis, n.sp. One specimen; obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Cyrtomaia murrayi, n.g., n.sp. Two specimens; obtained at no other locality.

Oxypleurodon stimpsoni, n.g., n.sp. One specimen; obtained also at Station 210, 375 fathoms. Only species of the genus.

Pugettia velutina, n.sp. One specimen; obtained at no other locality.

Hyastenus elegans, n.sp. One specimen; obtained at no other locality.

Pilumnus normani, n.sp. One specimen; obtained at no other locality.

Lupocyclus (Parathranites) orientalis, n.sp. Several specimens; obtained also at Station 219, 150 fathoms.

Platyonychus iridescens, n.sp. Five specimens; obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Cassia, n.sp. (?).

Oniscia cithara, n.sp. Obtained at no other locality.

Natica insularum, n.sp. Obtained at no other locality.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Octopus arcolatus, De Haan, MS. One specimen; obtained at no other locality by the Challenger. Recorded from Japan and Hong Kong.

- Sepia sulcata*, n.sp. One specimen ; obtained at no other locality.
 „ *kiensis*, n.sp. One specimen ; obtained at no other locality.

STATION 192.

TUNICATA (Herdman, Zool. pts. 17 and 38).

- Polycarpa quadrata*, n.sp. Three specimens ; obtained at no other locality.
Ecteinascidia crassa, n.g., n.sp. Two specimens ; obtained at no other locality.
Cynthia pallida, Heller. One specimen ; obtained also at the Cape and Fiji.

FISHES (Günther, Zool. pts. 6 and 57).

- Urolophus kaianus*, n.sp. Obtained at no other locality.
Anthias megalepis, n.sp. Obtained at no other locality.
Centropristis pleurospilus, n.sp. Obtained at no other locality.
Propoma roseum, n.g., n.sp. Obtained at no other locality. Only species of the genus.
Sebastes hexanema, n.sp. Obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator").
Lioscorpius longiceps, n.g., n.sp. Obtained also at Station 204, 115 fathoms. Only species of the genus. Recorded subsequently from Indian Ocean ("Investigator").
Myripristis kaianus, n.sp. Obtained at no other locality.
Antigonia capros, Lowe. Three specimens ; obtained at no other locality by the Challenger. Recorded from Madeira, Barbadoes, Manado, and Japan.
Acanthaphritis grandisquamis, n.g., n.sp. Obtained at no other locality. Only species of the genus.
Champsodon vorax, Günther. Numerous specimens ; obtained also at Stations 204 and 219, 115 and 152 fathoms. Recorded from Chinese and Japanese seas, and subsequently from Indian Ocean ("Investigator").
Uranoscopus kaianus, n.sp. Obtained also at Station 188.
Trigla leptacanthus, n.sp. Obtained at no other locality.
Lepidotrigla spiloptera, n.sp. Obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator") (var.).
Peristethus moluccense, Bleeker. Obtained at no other locality by the Challenger. Recorded from East Indies.
Callionymus kaianus, n.sp. Obtained at no other locality.
Heliastes roseus, n.sp. Obtained at no other locality.
Ophidium muranolepis, n.sp. Obtained at no other locality.
Pacilopsetta colorata, n.g., n.sp. Two specimens ; obtained at no other locality. Only species of the genus.

STATION 192.

Anticitharus polyspilus, n.g., n.sp. Two specimens; obtained at no other locality.
Only species of the genus.

Samaris maculatus, n.sp. Obtained at no other locality.

Solca kaiana, n.sp. Obtained at no other locality.

Saurus kaianus, n.sp. Obtained at no other locality.

Triacanthodes anomalus, Schlegel. Several specimens; obtained at no other locality
by the Challenger. Recorded from Japan.

In addition to the foregoing, the following are recorded in the Station-book:—
Dentalium, several Polyzoa, and Brachiopod.

Excluding Protozoa, over 400 specimens of invertebrates and fishes were obtained at this Station, belonging to about 167 species, of which four-fifths (132 species) are new to science, including representatives of 32 new genera; 110 of the new species and 15 new genera were not obtained elsewhere.

This was one of the most productive and interesting hauls obtained during the cruise, some of the specimens having the appearance of true deep-sea inhabitants; all the conditions, both physical and biological, appear to be very peculiar, being partly littoral or sub-littoral and partly abysmal.

STATION 193.

Station 193 (Sounding 326), Arrou Islands to Banda (see Chart 31 and Diagram 14).

September 28, 1874; lat. 5° 24' S., long. 130° 37' 15" E.

Temperature of air at noon, 84°·0; mean for the day, 82°·3.

Temperature of water:—

Surface, ...	83·5	450 fathoms, ...	42·6
25 fathoms, ...	81·0	550 "	40·7
50 "	78·0	600 "	40·1
75 "	72·0	700 "	39·2
100 "	66·0	800 "	38·3
125 "	60·0	900 "	38·0
150 "	55·3	1100 "	38·0
200 "	50·2	1300 "	38·0
300 "	46·0	1500 "	38·0
350 "	44·7	Bottom, ...	38·0

Density at 60° F.:—

Surface, ...	1·02565	300 fathoms, ...	1·02582
50 fathoms, ...	1·02564	400 "	1·02582
100 "	1·02583	600 "	1·02569
200 "	1·02589	Bottom, ...	1·02558

Depth, 2800 fathoms ; deposit, Volcanic Mud, containing only a trace of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.). STATION 193.

At 4 A.M. daylight, observed Bird Island. At 8.40 A.M. stopped and sounded in 2800 fathoms. Obtained serial temperatures down to 1500 fathoms. The carbonic acid was determined in water from 400 fathoms, and amounted to 40.0 milligrammes per litre. At 11.45 A.M. proceeded. At 2.40 P.M. observed a water-spout. At 6.15 P.M. stopped and sounded in 100 fathoms, no bottom. At 6.50 P.M. proceeded. At depths of 600 and 400 fathoms Mr. Buchanan got samples of a milky white water, the colour being due to the presence of white particles which showed no structure under the microscope. This white matter disappeared when treated with acid, apparently with effervescence. In this connection, the Governor and other gentlemen at Banda said that in the months of July and August the water had frequently a milky white appearance.

Distance at noon from Goonong Api Island, 69 miles. Made good 86 miles. Amount of current 11 miles, direction N. 52° W.

Surface Organisms.—The following species are recorded from the surface between Arrou and Banda Islands :— ORGANISMS FROM SURFACE-NETS.

COPEPODA (Brady, Zool. pt. 23).

Eucalanus attenuatus (Dana).
Hemicalanus orientalis, n.sp.
Undina vulgaris, Dana.
Scolecithrix danae (Lubbock).
Euchæta prestandreae, Philippi.

HETEROPODA (Smith, Zool. pt. 72).

Pterotrachea n.sp. (?).

FISHES (Günther, Zool. pt. 6).

Priacanthus sp. (?).

The tow-nets on September 27 and 28 procured a large number of things, including the following :—*Peridinium*, *Pyrocystis*, large green Algæ (*Halosphaera*), *Globigerina*, *Orbulina*, *Pulvinulina*, *Sagitta*, many Crustaceans, *Atlanta*, *Oxygyrus*, many Pteropods, *Appendicularia*.

Stations 194 and 194A (Soundings 327 and 328), off Banda Islands (see Chart 33). STATIONS 194 AND 194A.

September 29, 1874.

Temperature of air at noon, 80°·8 ; mean for the day, 80°·9.

Temperature of water at surface, 83°·0.

Depth, 200 and 360 fathoms ; deposit, Volcanic Mud.

At 5.35 A.M. observed Banda Islands on the starboard bow. At 10.20 A.M.

STATIONS 194
AND 194A.

stopped and sounded in 200 fathoms (Station 194). Put over dredge, which came up at 11.30 A.M. with several specimens. At noon put over trawl in 360 fathoms (Station 194A). At 1.30 P.M. hove up trawl containing numerous specimens, and proceeded into Banda Harbour, anchoring there at 2.15 P.M.

ANIMALS FROM
DREDGE
AND TRAWL.

The following species are recorded in the Zoological Reports from the dredge and trawl at these Stations :—

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Crateromorpha tumida, n.sp. Two specimens (360 fathoms); obtained at no other locality.

Hyalonema (Stylocalyx) globus, n.sp. One specimen (360 fathoms); obtained at no other locality.

Farrea clavigera n.sp. (200 to 360 fathoms); obtained at no other locality.

Sclerothamnus clausii, Marshall. Two fragments (360 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.

Myliusia callocyathus, Gray. One specimen (200 fathoms); obtained also at Stations 24 and 192.

Aulocystis zittelii (Marshall). One specimen (360 fathoms); obtained also at Station 192.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Acanella rigida, n.sp. (200 and 360 fathoms); obtained at no other locality.

Pleurocorallium secundum, Dana. One specimen (200 fathoms); obtained also at Stations 145 and 192.

ACTINIARIA (Hertwig, Zool. pt. 15).

Sagartia sp. (?). One specimen (360 fathoms).

CORALS (Moseley, Zool. pt. 7).

Pleurocyathus brunneus, n.g., n.sp. One specimen (360 fathoms); obtained at no other locality. Only species of the genus. [Recorded in error from 60 fathoms].

Lophohelia arbuscula, n.sp. One specimen (200 or 360 fathoms); obtained at no other locality.

Bathyactis symmetrica (Pourtales). (360 fathoms); for distribution see Station 24.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Astrotoma murrayi, n.sp. (200 fathoms); obtained at no other locality.

ANNELIDA (M'Intosh, Zool. pt. 34).

STATIONS 194
AND 194A.

Scalisetosus ceramensis, n.g., n.sp. One specimen (360 fathoms); obtained at no other locality. Only species of the genus.

AMPHIPODA (Stebbing, Zool. pt. 67).

Lanceola sp. (?). One specimen (360 fathoms).

MACRURA (Spence Bate, Zool. pt. 52).

Cheiroplatea cenobita, n.g., n.sp. One specimen (200 fathoms); obtained at no other locality. Only species of the genus.

Eiconaxius acutifrons, n.g., n.sp. One specimen (360 fathoms); obtained at no other locality.

Hemipenæus semidentatus, n.g., n.sp. One specimen (200 fathoms); obtained also at Stations 170 and 171.

Glyphocrangon regalis, n.sp. One specimen (200 fathoms); obtained also at Stations 171 and 173.

Heterocarpus dorsalis, n.sp. Two specimens (200 fathoms); obtained at no other locality.

„ *lævigatus*, n.sp. One specimen (200 fathoms); obtained at no other locality.

Acanthephyra angusta, n.sp. Two specimens (200 fathoms); obtained at no other locality.

„ *sica*, n.sp. Four specimens (200 fathoms); for distribution see Station 40.

„ *armata*, M.-Edwards. One specimen (200 fathoms); obtained at no other locality by the Challenger. Recorded from West Indies.

„ *brachytelsonis*, n.sp. Two specimens (200 fathoms); obtained also at Stations 170, 171, 214, 232, 236, and 318.

Nematocarcinus undulatipes, n.sp. One specimen (200 fathoms); obtained also at Stations 171, 200, and 214.

ANOMURA (Henderson, Zool. pt. 69).

Galathea inconspicua, n.sp. One specimen (360 fathoms); obtained at no other locality.

Uroptychus australis, n.sp. Three specimens (360 fathoms); obtained also at Stations 164B, 170, and 171.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Arca (Barbatia) corpulenta, n.sp. (200 fathoms); obtained also at Stations 184, 198, 216A, 271, and 300.

STATIONS 194
AND 194A.

GASTEROPODA (Watson, Zool. pt. 42).

Murex (Haustellum) sp. (?). One specimen (200 fathoms).

CEPHALOPODA (Hoyle, Zool. pt. 44).

Spirula peronii, Lamarek. One specimen (360 fathoms); shells obtained also at the surface in North Atlantic, Raine Island, and off New Guinea.

BRACHIOPODA (Davidson, Zool. pt. 1).

Discina atlantica, King. (200 to 360 fathoms); obtained also at Stations 106, 237, 246, 271, and 300.

FISHES (Günther, Zool. pts. 6 and 57).

Peristethus murrayi, n.sp. One specimen (200 fathoms); obtained at no other locality.

Recorded subsequently from Indian Ocean ("Investigator").

Ceratias bispinosus, n.sp. One specimen (360 fathoms); obtained at no other locality.

Gonostoma elongatum, n.sp. One specimen (360 fathoms); obtained also at Station 191.

In addition to the foregoing, the following are recorded in the Station-book:—Five specimens of an Ophiurid with conical body, two Holothurians, Aphroditaceans in Sponge, two specimens of *Alpheus* in Sponge, and a Macrurid fish.

Excluding Protozoa, over 50 specimens of invertebrates and fishes were obtained at these Stations, belonging to about 39 species, of which 24 are new to science, including representatives of 5 new genera; 16 of the new species and 3 new genera were not obtained elsewhere.

The trawl brought up a specimen of the long-sought *Spirula* animal. It showed no signs of life, and some of the naturalists thought it might have been dead before capture by the trawl. Adams described the genus and enumerated all the specimens hitherto obtained. Owen obtained the specimen upon which he founded the species *Litnus reticulatus* from the Sulu Sea (H.M.S. "Samarang"). Our animal, taken near that locality, has been described by Professor Huxley as *Spirula peroni*,¹ Lamarek. It is probable that *Spirula* swims and creeps along the bottom in deep water, adhering to stones and hiding in holes when anything like a trawl or dredge comes to disturb it. Only on this hypothesis can the scarcity of the animal be accounted for; it has never been taken in the Moluccas, where the natives have orders to look out for it, and at Cape York and Fiji the natives declare that the shell has no animal at all.

¹ A description of this specimen is in course of preparation by Dr. Paul Pelseneer (see Index).

Willemoes-Suhm writes: "The blind Amphipod obtained [= *Lanceola* sp.], with its plate-like eye-rudiments without optical apparatus, shows on the whole characters peculiar to the Crevettinæ, but as its maxillipeds have no palpi it evidently belongs to the Hyperidæ. It represents an unknown type between the two families, and is of gigantic dimensions (about 70 mm. in length). Gigantic Crevettinæ were taken off the Crozet Islands, and in the Antarctic we obtained a very interesting Amphipod without eyes, in which the rostrum had apparently become a sense-organ, showing that Amphipods are affected, though rarely, in their organs of sight, like Decapods."

STATIONS 194
AND 194A.

The Challenger remained at Banda from 2.15 P.M. on September 29 till 8 P.M. on October 2, 1874 (for description of the island see *Narr. Chall. Exp.*, vol. i. pp. 561-569). During this time dredgings in shallow water were conducted by Mr. Murray from the steam pinnacle; the deposit in 17 fathoms was a Volcanic Sand or gravel containing 52.09 per cent. of carbonate of lime. The following species are recorded in the Zoological Reports from the vicinity:—

AT BANDA.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Platycaulos danielsseni, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Ellisella maculata, Studer. Obtained also in Torres Strait.

Sarcophytum ambiguum, n.sp. Obtained at no other locality.

ANIMALS FROM
BANDA.

REEF CORALS (Quelch, Zool. pt. 46).

Acrohelia horrescens (Dana). Two specimens; obtained at no other locality by the Challenger.

Seriatopora cervina (Lamarck). Obtained also at Philippines.

Pocillopora acuta, Lamarck. Obtained also at Amboina and Philippines.

Euphyllia glabrescens (Chamisso and Eysenhardt). Obtained also at Cape York.

Physogyra aperta, n.g., n.sp. Obtained at no other locality.

Mussa multilobata, Dana. Obtained at no other locality by the Challenger.

Symphyllia acuta, n.sp. Obtained at no other locality.

Ulophyllia aspera, n.sp. Obtained at no other locality.

„ *cellulosa*, n.sp. Obtained at no other locality.

Tridacophyllia manicina, Dana. Obtained also at Amboina and Ternate.

Hydnophora demidoffi, Fischer. Obtained at no other locality by the Challenger.

Astræa pandanus, Dana. Obtained at no other locality by the Challenger.

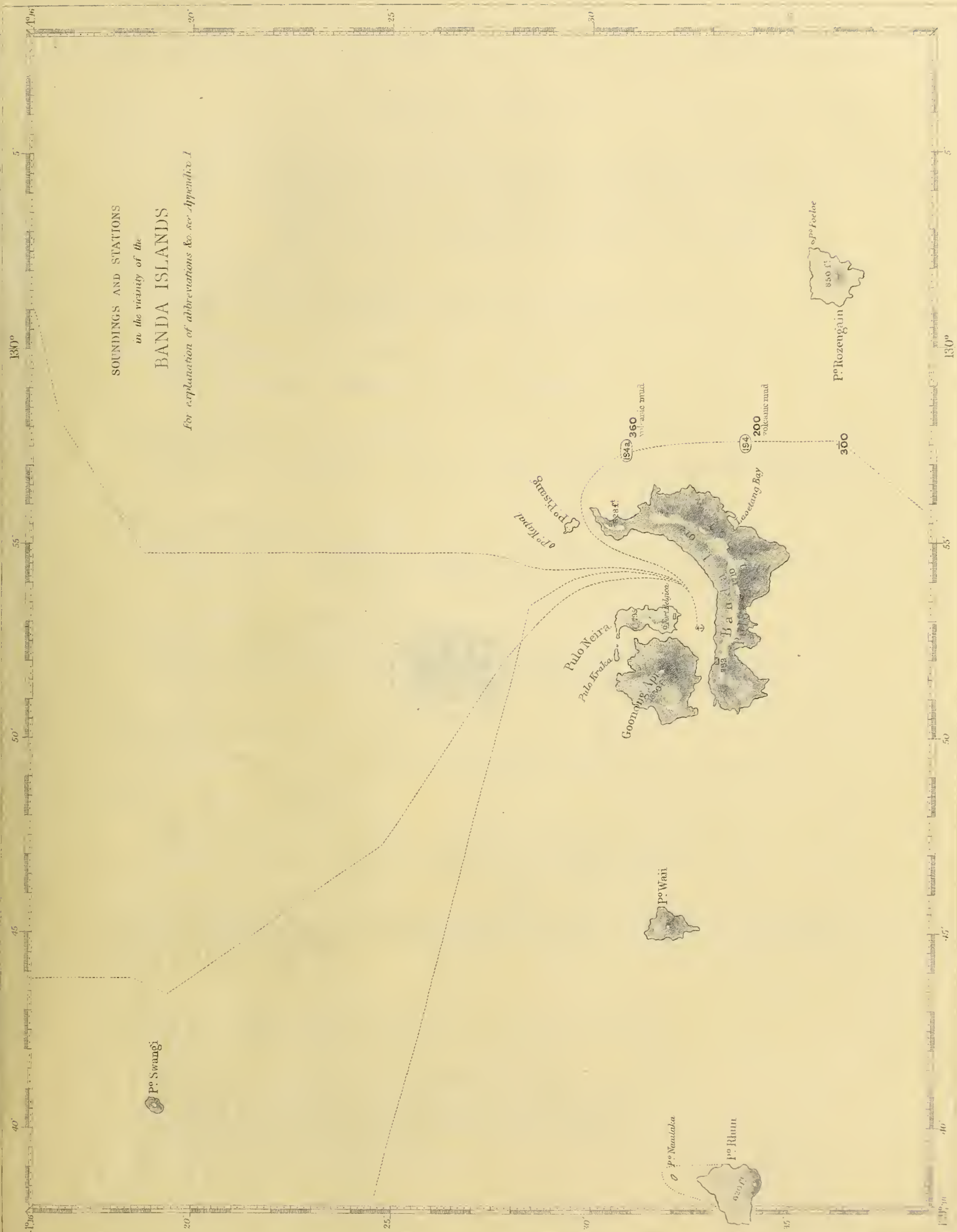
„ *doreyensis* (M.-Edwards and Haime). Obtained at no other locality by the Challenger.

BANDA

- Astræa speciosa*, Dana. Obtained at no other locality by the Challenger.
- Goniastrea eximia* (Dana). Obtained at no other locality by the Challenger.
- „ *javistella* (Dana). Obtained at no other locality by the Challenger.
- „ *quoyi*, M.-Edwards and Haime. Obtained also at Cape York.
- „ *coronalis*, n.sp. Obtained at no other locality.
- Phymastrea aspera*, n.sp. Obtained at no other locality.
- Merulina crispa*, Dana. Obtained at no other locality by the Challenger.
- Fungia patella* (Ellis and Solander). Obtained also at Amboina and Philippines.
- „ *repanda*, Dana. Several specimens; obtained also at Amboina and Philippines.
- „ *confertifolia*, Dana. Obtained also at Fiji.
- „ *plana*, Studer. Obtained at no other locality by the Challenger.
- Herpetolitha crassa*, Dana. Obtained at no other locality by the Challenger.
- Madrepora securis*, Dana. Obtained also at Philippines.
- „ *mirabilis*, n.sp. Obtained at no other locality.
- „ *diffusa*, Verrill. Obtained at no other locality by the Challenger.
- „ *tubigera*, Horn. Obtained at no other locality by the Challenger.
- „ *capillaris*, Klunzinger. Several specimens; obtained at no other locality by the Challenger.
- Astreopora profunda*, Verrill. Obtained at no other locality by the Challenger.
- Anacropora gracilis*, n.sp. Obtained at no other locality.
- Montipora fragilis*, n.sp. Obtained at no other locality.
- „ *levis*, n.sp. Obtained also at Fiji.
- Porites arenosa* (Esper). Obtained also at Tongatabu, Fiji, and Tahiti.
- „ *gaimardi*, M.-Edwards and Haime. Obtained at no other locality by the Challenger.

CRINOIDEA (Carpenter, Zool. pt. 60).

- Actinometra multibrachiata*, n.sp. One specimen; obtained at no other locality.
- „ *elongata*, n.sp. One specimen; obtained at no other locality.
- „ *fimbriata* (Lamarck). Three specimens; obtained also at Station 208, 18 fathoms. Recorded from Sunda Strait, Australia, Java, Nicobars, and Madagascar.
- „ *coppingeri*, Bell. One specimen; obtained also at Philippines. Recorded from Australia, Amboina, Singapore, and China Sea.
- „ *sentosa*, n.sp. Two specimens; obtained at no other locality by the Challenger. Recorded from Moluccas.
- „ *divaricata*, n.sp. One specimen; obtained at no other locality.





- Actinometra duplex*, n.sp. One specimen; obtained at no other locality. BANDA.
 „ *parvicirra* (Müller). Two specimens; for distribution see the Cape.
 „ *littoralis*, n.sp. One specimen; obtained at no other locality.
 „ *regalis*, n.sp. Two specimens; obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiothrix purpurea, Martens. Obtained also at Station 177 (?).

ANNELIDA (M'Intosh, Zool. pt. 34).

Chloeia fusca, n.sp. Obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Bithynis lar (Fabricius). Three specimens; obtained also at Fiji, Philippines, and Tahiti.

BRACHYURA (Miers, Zool. pt. 49).

Varuna litterata (Fabricius). (Fresh water); obtained also at Philippines and New Guinea. Recorded from Indo-Pacific region.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Mactra decora, Deshayes. Obtained at no other locality by the Challenger.
Cytherea (Dione) philippinarum, Hanley. Obtained also at Fiji and Tahiti.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Octopus bandensis, n.sp. Obtained at no other locality.

TUNICATA (Herdman, Zool. pt. 17).

Polycarpa sulcata, n.sp. Three specimens; obtained at no other locality.
Ecteinascidia fusca, n.g., n.sp. Obtained at no other locality.

In the foregoing list 58 species are enumerated, of which 23 are new to science, including representatives of 3 new genera; 22 of the new species and 1 new genus were not obtained elsewhere.

Station 195 (Sounding 329), Banda to Amboina (see Chart 31).

STATION 195.

October 3, 1874; lat. 4° 21' S., long. 129° 7' E.

Temperature of air at noon, 77°·0; mean for the day, 78°·3.

Temperature of water at surface, 82°·0; bottom, 38°·0.

STATION 195.

Density at 60° F. at surface, 1.02602; bottom, 1.02568.

Depth, 1425 fathoms; deposit, Blue Mud, containing 31.36 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 5.30 A.M. stopped and put over trawl. Veered 4400 fathoms of rope as a sounding of 4000 fathoms was shown in the chart within a short distance. At 8 A.M. sounded and found bottom at 1425 fathoms. At 4 P.M. hove up trawl with numerous specimens, pumice-stones, and pieces of wood, fruits, &c. The netting of the trawl was covered with a network of branching Rhizopod tubes (*Rhizammima algæformis*). At 4.45 P.M. made all plain sail for Amboina.

Distance at noon from Noessaniva Point, Amboina, 71 miles. Made good 45 miles. Amount of current 10 miles, direction S. 66° W.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station:—

ANTIPATHARIA (Brook, Zool. pt. 80).

Schizopathes affinis, n.g., n.sp. Four specimens; obtained also at Station 218, 1070 fathoms.

Bathypathes patula, n.g., n.sp. Two young specimens; obtained also at Stations 218 (var.), 244, and 246.

ACTINIARIA (Hertwig, Zool. pts. 15 and 73).

Corallimorphus rigidus, Moseley, n.g., n.sp. One specimen; obtained also at Stations 146, 157, and 299.

Actinian. One specimen (in bad condition).

CORALS (Moseley, Zool. pt. 7).

Bathyactis symmetrica (Pourtalès). For distribution see Station 24.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha variabilis, n.sp. Obtained also at Station 24 (?).

Amphiura concolor, n.sp. Obtained also at Station 191.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Salenia hastigera, n.sp. For distribution see Station 106.

CEPHYRRA (Selenka, Zool. pt. 36).

Phascolion botulus, n.sp. One specimen; obtained at no other locality.

CIRRIPIEDIA (Hoek, Zool. pt. 25).

STATION 195.

Scalpellum moluccanum, n.sp. One specimen ; obtained at no other locality.

SCHIZOPODA (Sars, Zool. pt. 37).

Gnathophausia willemoesii, n.g., n.sp. Two specimens ; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Dorodotes reflexus, n.g., n.sp. One specimen ; obtained also at Station 205, 1050 fathoms. Recorded subsequently from Indian Ocean ("Investigator").

Nematocarcinus productus, n.sp. One specimen ; obtained also at Stations 177 (?), 205, and 237.

Notostomus longirostris, n.sp. One specimen ; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Parapagurus abyssorum, M.-Edwards, MS. Several specimens ; for distribution see Station 56.

Galacantha talismanii, M.-Edwards, MS. One specimen ; obtained at no other locality by the Challenger. Recorded from North Atlantic ("Talisman").

BRACHYURA (Miers, Zool. pt. 49).

Ethusa (Ethusina) gracilipes, n.sp., var. *robusta*, nov. One specimen ; obtained also at Stations 191 and 207.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Enoploteuthis margaritifera, Rüppell. One specimen ; obtained also at Station 271, 2425 fathoms. Recorded from Mediterranean.

POLYZOA (Busk, Zool. pt. 30).

Cellularia cirrata, n.sp. Obtained at no other locality.

Farciminaria hexagona, n.sp. Obtained also at Stations 145 and 196.

In addition to the foregoing, the following are recorded in the Station-book :—
Hyalonema, three *Palythoa*-like Actinians on shells, four very large Holothuriæ, Annelid tubes, two large specimens of *Dentalium* with Gephyreans.

Excluding Protozoa, over 50 specimens of invertebrates were obtained at this Station, belonging to about 26 species, of which 15 are new to science, including representatives of 5 new genera ; 5 of the new species were not obtained elsewhere.

STATION 193.

Willemoes-Suhm writes: "The trawl brought up two specimens of a *Gnathophausia* different from the species taken on September 23; they seemed to be unusually large specimens of the widely-spread *Gnathophausia zoëa*. The candelabriform Polyzoon was also present."

ORGANISMS FROM
THE DEPOSIT.

DIATOMACEÆ.—The following species of Diatoms were observed by Mr. Comber in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.) :—

<i>Navicula splendida</i> , Gregory, var. <i>diplosticta</i> , Grunow.	<i>Coscinodiscus convexus</i> , A. Schmidt.
" <i>aspera</i> , Ehrenberg.	" <i>concinus</i> , Smith.
<i>Achnanthes brevipes</i> , Agardh.	" <i>janischii</i> , var. A. Schmidt, <i>arafurensis</i> , Grunow.
<i>Nitzschia marina</i> , Grunow.	" <i>reniformis</i> , Castracane (= <i>Stoschia admirabilis</i> , Janisch).
<i>Synedra doliolus</i> , Wallich.	" <i>africanus</i> , Janisch.
<i>Grammatophora oceanica</i> , Ehrenberg.	" <i>nodulifer</i> , A. Schmidt.
<i>Isthmia enervis</i> , Ehrenberg.	" <i>obscurus</i> , A. Schmidt.
<i>Triceratium robertsonianum</i> , Greville.	" <i>rex</i> , Wallich.
" <i>favus</i> , Ehrenberg, forma <i>tetragona</i> .	<i>Ethmodiscus</i> sp. (?).
<i>Biddulphia pulchella</i> , Gray.	<i>Stictodiscus californicus</i> , Greville.
<i>Hemidiscus cuneiformis</i> , Wallich.	<i>Actinocyclus punctulatus</i> , Castracane.
<i>Coscinodiscus leptopus</i> , Janisch.	<i>Asteromphalus roperianus</i> , Greville.
" <i>eccentricus</i> , Ehrenberg, var. <i>punctifera</i> , Grunow.	" <i>elegans</i> , Greville.
" <i>radiatus</i> , Ehrenberg.	<i>Chaetoceros coarctata</i> , Lauder.
" <i>oculus-iridis</i> , Ehrenberg.	
" <i>centralis</i> , Ehrenberg.	

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following are recorded in the note-books from the surface-nets on this date :—*Peridinium*, *Coscinodiscus*, Foraminifera, *Sagitta*, Pteropods, *Loligo* (from the trawl), *Appendicularia*, and other oceanic pelagic forms.

AT AMBOINA.

The Challenger remained at Amboina from 4.30 P.M. on October 4 till 4 P.M. on October 10, 1874 (for description of the island see *Narr. Chall. Exp.*, vol. i. pp. 576–585). During the stay Professor Thomson and Mr. Murray were engaged several days dredging from the pinnacle in depths of 15 to 130 fathoms, the deposit in depths of 15 to 20 fathoms being composed of shells and sand, containing 59.26 per cent. of carbonate of lime. The following species are recorded in the Zoological Reports as having been obtained in the vicinity :—

ANIMALS FROM
AMBOINA.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Halichondria pelliculata, n.sp. One specimen (100 fathoms); obtained at no other locality.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Pacilla tra laminaris, n.sp. Several fragments (100 fathoms); obtained at no other locality.

Azorica pfeifferæ, Carter. One specimen (15 to 25 fathoms); obtained also at AMBOINA.
Stations 33, 56, Cape Verdes, and Bahia.

ALCYONARIA (Wright and Studer, Zool. pts. 64 and 81).

Scirpearella moniliforme, n.g., n.sp. Three specimens (100 fathoms); obtained at no other locality.

Melitodes lævis, n.sp. One specimen (15 to 25 fathoms); obtained at no other locality.

„ *fragilis*, n.sp. One specimen and fragments (15 to 20 fathoms); obtained at no other locality.

Siphonogorgia köllikeri, n.sp. One specimen and fragments; obtained at no other locality.

„ *pendula*, n.sp. One specimen; obtained at no other locality.

Xenia elongata, Dana. One specimen (shallow water); obtained at no other locality by the Challenger.

REEF CORALS (Quelch, Zool. pt. 46).

Stylophora digitata (Pallas). One specimen; obtained also at Cape York.

Pocillopora acuta, Lamarck. One specimen; obtained also at Banda and Philippines.

Galaxea aspera, n.sp. Obtained at no other locality.

„ *tenella*, Brüggemann. One specimen; obtained at no other locality by the Challenger.

„ *fragilis*, n.sp. One specimen; obtained at no other locality.

Euphyllia rugosa, Dana. One specimen; obtained at no other locality by the Challenger.

Mussa echinata, M.-Edwards and Haime. Obtained at no other locality by the Challenger.

„ *brueggemanni*, n.sp. Two specimens; obtained at no other locality.

Tridacophyllia manicina, Dana. Obtained also at Banda and Ternate.

Goniastrea multilobata, n.sp. Two specimens; obtained at no other locality.

Prionastrea robusta (Dana). Obtained at no other locality by the Challenger.

Psammocora exesa, Dana. One specimen; obtained at no other locality by the Challenger.

Oxyphora contorta, n.sp. One specimen; obtained at no other locality.

Fungia patella (Ellis and Solander). Obtained also at Banda and Philippines.

„ *repanda*, Dana. One specimen; obtained also at Banda and Philippines.

Podabacia robusta, n.sp. One specimen; obtained at no other locality.

Cryptabacia talpina (Lamarck). Obtained at no other locality by the Challenger.

Madrepora cerealis, Dana. One specimen; obtained at no other locality by the Challenger.

ANCHOA

Madrepora effusa, Dana. One specimen; obtained at no other locality by the Challenger.

„ *gracilis*, Dana. Two specimens and fragments; obtained at no other locality by the Challenger.

„ *appressa* (Ehrenberg). One specimen; obtained at no other locality by the Challenger.

Turbinaria crater (Pallas). One specimen; obtained also at Cape York and Wednesday Island.

Montipora patula, Verrill. One specimen; obtained at no other locality by the Challenger.

„ *foliosa* (Pallas). Numerous specimens and fragments; obtained at no other locality by the Challenger.

Porites palmata, Dana. Obtained also at Philippines.

Rhodaræa tenuidens, n.sp. One specimen; obtained also at Philippines.

Millepora intricata, M.-Edwards and Haime. One specimen; obtained at no other locality by the Challenger.

ASTEROIDEA (Sladen, Zool. pt. 51).

Astropecten velitaris, Martens. (15 to 25, or 100 fathoms?); obtained also at Admiralty Islands. Recorded from China.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiomusium simplex, n.sp. (100 fathoms); obtained at no other locality.

Ophionereis dubia (Müller and Troschel). (100 fathoms); obtained also at Canary Islands (?) and Fiji (?).

Ophiomyxa australis, Lütken. (100 fathoms); for distribution see Station 109.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Dorocidaris (Cidaris) bracteata, n.sp. (15 to 25, and 100 fathoms); obtained at no other locality.

Catopleurus maillardi (Michelin). (100 fathoms); obtained also at Stations 192 and 201.

Salmacis dussumieri, Agassiz. (100 fathoms); obtained also at Station 212, 10 to 20 fathoms.

Clypeaster humilis (Leske). (15 to 20 fathoms); obtained also at Station 212, 10 to 20 fathoms.

Laganum putnami, Barn. (15 to 25 fathoms); obtained at no other locality by the Challenger.

Peronella decagonalis (Lesson). (15 to 25 fathoms); for distribution see Station 172.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

AMBOINA.

Synapta beselii, Jæger. Several specimens; obtained also at Station 177, Philippines, and Tahiti.

Holothuria atra, Jæger. One specimen; obtained also at Station 177 and Fiji.

ANNELIDA (M'Intosh, Zool. pt. 34).

Nothria willemoesii, n.sp. One specimen (100 fathoms); obtained at no other locality.

Glycera amboinensis, n.sp. One specimen (15 fathoms); obtained at no other locality.

OSTRACODA (Brady, Zool. pt. 3).

Macrocypis maculata, Brady. (15 to 20 fathoms); obtained also at Stations 145, 149, 162, and Simon's Bay, Cape.

Bairdia amygdaloides, Brady. (15 to 20 fathoms); for distribution see Station 162.

Cythere scutigera, Brady. (15 to 20 fathoms); obtained also at Stations 167, 300, and New Guinea.

Cytheridea spinulosa, Brady. (15 to 20 fathoms); obtained also at Station 279, 420 fathoms. Recorded from Mauritius.

Cytherella pulchra, Brady. (15 to 20 fathoms); obtained also at Stations 33, 167, 344, and Port Jackson.

STOMATOPODA (Brooks, Zool. pt. 45).

Squilla chlorida, n.sp. One specimen (15 fathoms); obtained at no other locality.

Lysiosquilla maculata (Fabricius). Two specimens; obtained also at Philippines.

MACRURA (Spence Bate, Zool. pt. 52).

Scallasis amboinæ, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus.

Nika processa, n.sp. One specimen (15 fathoms); obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Raninoides personatus, White, MS. Several specimens (15 fathoms); obtained at no other locality by the Challenger. Recorded from Eastern seas.

Cosmonotus grayii, Adams and White. One specimen (15 fathoms); obtained at no other locality by the Challenger. Recorded from Borneo and Formosa.

Munida spinulifera, Miers. One specimen (15 fathoms); obtained at no other locality by the Challenger. Recorded from Arafura Sea.

„ *militaris*, n.sp. One specimen (100 fathoms); obtained also at Stations 173, 192, 200 (var.), and 210 (var.).

AMBOINA

Uroptychus tridentatus, n.sp. One specimen (15 fathoms (?), probably from deep water); obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Naxia hystrix, n.sp. One specimen (100 fathoms); obtained at no other locality.

Iambrus longimanus (Linné). One specimen (100 fathoms); obtained also at Station 188.

„ *turriger*, White. One specimen (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines, Borneo, and Australia.

Gonoplaea sinuatifrons, n.sp. One specimen (15 to 25 fathoms); obtained at no other locality.

Calappa hepatica (Linné). One specimen (10 fathoms); obtained also at Tongatabu and Sandwich Islands.

„ *gallus* (Herbst). One specimen (15 to 25 fathoms); obtained also at Bermuda, Cape Verdes, and Fernando Noronha.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Corbula tunicata, Hinds. (15 to 25 fathoms); obtained also at Station 189 and Port Jackson.

„ *modesta*, Hinds. (15 to 20 fathoms); obtained also at Station 172.

Semele (Theora) iridescent (Hinds). Single valve (15 to 20 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Japan.

Psammodia sp. (?). Single valve (15 to 20 fathoms).

Tellina (Macoma) consociata, n.sp. (15 to 25 fathoms); obtained at no other locality.

„ (*Angulus*) *vernalis*, Hanley. (15 to 20 fathoms); obtained at no other locality by the Challenger. Recorded from Singapore.

Tapes obscurata, Deshayes. Single valve (15 to 20 fathoms); obtained at no other locality by the Challenger.

Venus (Chione) lionota, n.sp., var. (15 to 20 fathoms); obtained also at Station 188.

Lucina (Codakia) sp., juv. Single valve (15 to 20 fathoms).

Cryptodon bullulus (Reeve). Single valve (15 to 20 fathoms); obtained at no other locality by the Challenger. Recorded from Australia.

Diplodonta amboinensis, n.sp. (15 to 20 fathoms); obtained at no other locality.

Arca (Barbatia) sculptilis, Reeve. (15 to 20 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines.

Arca (*Scapharca*) *clathrata*, Reeve. One specimen (15 to 25 fathoms); obtained also in Torres Strait. AMBOINA.

Plicatula sp. (?). Single valve (15 to 20 fathoms); obtained also in Flinders Passage.

GASTEROPODA (Watson, Zool. pt. 42).

Cyclostrema sp. (?). (15 to 25 fathoms).

Murex (*Tribulus*) *aduncospinosus* (Beck), Reeve. (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Japan.

„ (*Pseudomurex*) *pauper*, n.sp. One specimen (15 to 20 fathoms); obtained at no other locality.

Nassa (*Niotha*) *ravida*, Adams. Several specimens (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Torres Strait.

Oliva rufula, Duclos. (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from Philippines and Moluccas.

„ (*Galeola*) *picta*, Reeve. (15 to 25 fathoms); obtained also at Station 172 and Arrou Islands.

Fasciolaria (*Latirus*) *contempta*, Adams. (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from West Indies.

Ranella rana (Linné). (15 to 25 fathoms); obtained also at Stations 188, 189, 190, and 203.

Nassaria amboynensis, n.sp. (15 to 25 fathoms); obtained at no other locality.

Aporrhais cancellata (Lamarck). (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from Amboina and Indian Ocean.

Strombus (*Gallinula*) *succinctus*, Linné. (15 to 25 fathoms); obtained at no other locality by the Challenger. Recorded from East Indies and Philippines.

Turritella cingulifera, Sowerby. (15 to 25 fathoms); obtained also at Station 188, Fiji, and Torres Strait.

Cerithium (*Vertagus*) *kochi*, Philippi. (15 to 25 fathoms); obtained also at Arrou Islands.

Bittium amboynense, n.sp. (15 to 20 fathoms); obtained at no other locality.

„ *diplax*, n.sp. (15 to 20 fathoms); obtained at no other locality.

Utriculus (*Tornatina*) *amboinensis*, n.sp. (15 to 25 fathoms); obtained at no other locality.

Cylichna labiata, n.sp. (15 to 25 fathoms); obtained at no other locality.

AMPHIBIA

FISHES (Günther, Zool. pt. 6).

Trypauchen vagina, Bl. (15 fathoms); obtained also at Hong Kong and Japan.*Bregmaceros maclellandi*, Thompson. (15 fathoms); obtained at no other locality by the Challenger.

In the foregoing list 103 species are enumerated, of which 34 are new to science, including representatives of 2 new genera; 31 of the new species and 1 new genus were not obtained elsewhere.

STATION 196.

Station 196 (Sounding 330), Amboina to Samboangan (see Chart 31).

October 13, 1874; lat. $0^{\circ} 48' 30''$ S., long. $126^{\circ} 58' 30''$ E.Temperature of air at noon, $82^{\circ} \cdot 8$; mean for the day, $81^{\circ} \cdot 2$.Temperature of water at surface, $83^{\circ} \cdot 0$; bottom, $36^{\circ} \cdot 9$.Density at 60° F. at surface, 1.02558; bottom, 1.02584.

Depth, 825 fathoms; deposit, Hard Ground, hard conglomerate containing 93.70 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 5.30 A.M. got up steam, and at 6.30 A.M. sounded in 825 fathoms. At 8 A.M. put trawl over. At 10.45 A.M. trawl came up with some pieces of conglomerate, and numerous specimens. At 11 A.M. made all plain sail. At 4.30 P.M. got up steam as the wind had fallen to a calm. Proceeded under steam along the coast of Great and Little Tawalls Islands. Much lightning and some thunder with passing showers towards midnight. Sea slightly phosphorescent.

Wolf Rock distant at noon, 56 miles. Made good 55 miles. Amount of current 9 miles, direction N. 34° W.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station:—

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Experiopsis challenger, n.sp. Thirteen specimens and fragments; obtained also at Station 214, 500 fathoms (var. *neangensis*).

TETRACTISELLIDA (Sollas, Zool. pt. 63).

Tetulla pedifera, n.sp. One specimen; obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

STATION 196.

Cyathohelia axillaris, M.-Edwards and Haime. One specimen; obtained at no other locality by the Challenger.

Bathyactis symmetrica (Pourtales). For distribution see Station 24.

CIRRIPEDIA (Hoek, Zool. pt. 25).

Scalpellum hirsutum, n.sp. One specimen; obtained at no other locality.

AMPHIPODA (Stebbing, Zool. pt. 67).

Cystisoma spinosum (Fabricius) (?). One specimen; for distribution see Station V.

MACRURA (Spence Bate, Zool. pt. 52).

Haliporus neptunus, n.g., n.sp. Three specimens; obtained also at Station 191.

Oplophorus typus, M.-Edwards. One specimen; obtained also at Station 220, 1100 fathoms. Recorded from New Guinea.

ANOMURA (Henderson, Zool. pt. 69).

Homologenus sp. (?), juv. One specimen.

Munidopsis pilosa, n.sp. One specimen; obtained at no other locality.

BRACHYURA (Miers, Zool. pt. 49).

Oncinopus aranea, De Haan. One specimen; obtained also at Port Jackson (?) and Arafura Sea.

PYCNOGONIDA (Hoek, Zool. pt. 10).

Nymphon perlucidum, n.sp. One specimen; obtained at no other locality.

POLYZOA (Busk, Zool. pt. 30).

Brettia australis, n.sp. One specimen (on *Bicellaria bella*); obtained at no other locality.

Bicellaria bella, n.sp. Numerous specimens; obtained at no other locality.

„ *moluccensis*, n.sp. Obtained at no other locality.

„ *macilenta*, n.sp. Numerous specimens; obtained at no other locality.

Farciminaria hexagona, n.sp. Obtained also at Stations 145 and 195.

Flustra biseriata, n.sp. Obtained also at Station 299, 2160 fathoms.

Carbasea dissimilis, Busk. Obtained also at Stations 161, 162, and 163A.

Bifaxaria papillata, n.g., n.sp. Obtained at no other locality.

Siphonicytara serrulata, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.

STATION 196.

FISHES (Günther, Zool. pt. 57).

Gonostoma microdon, n.sp. For distribution see Station 23.

In addition to the foregoing, the Station-book records two Hydroids.

Excluding Protozoa, over 60 specimens of invertebrates and fishes were obtained at this Station, belonging to about 23 species, of which 15 are new to science, including representatives of 3 new genera; 10 of the new species and 1 new genus were not obtained elsewhere.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following are recorded in the note-books from the tow-nets on this date:—*Peridinium* in chains, a few large Diatoms, *Globigerina*, Radiolaria, Medusæ, *Diphyes* and other Siphonophoræ, Echinoderm larvæ, many *Sagittæ*, *Pilidium*, *Saphirina* and other Copepods, Hyperids, *Lucifer*, *Atlanta*, *Pterotrachea*, Pteropods and larvæ, Cephalopod larvæ, *Appendicularia*, and very many small blue *Salpæ*. *Phronima* with two houses containing young ones came up in the trawl.

STATION 197.

Station 197 (Sounding 331), Amboina to Samboangan (see Chart 31 and Diagram 14).

October 14, 1874; lat. $0^{\circ} 41' N.$, long. $126^{\circ} 37' E.$

Temperature of air at noon, $83^{\circ} \cdot 8$; mean for the day, $79^{\circ} \cdot 8$.

Temperature of water:—

Surface, ...	82.5	400 fathoms, ...	43.0
25 fathoms, ...	78.8	500 „	40.7
50 „	74.0	600 „	39.2
75 „	68.5	700 „	38.2
100 „	63.5	800 „	37.7
125 „	58.5	900 „	37.1
150 „	54.0	1000 „	36.6
200 „	50.0	1100 „	36.0
300 „	45.8	Bottom, ...	35.9

Density at $60^{\circ} F.$ at surface, 1.02523; bottom, 1.02593.

Depth, 1200 fathoms; deposit, Blue Mud.

Crossed the equator during the night. At 5.15 A.M. observed land on starboard bow. Stopped and sounded in 1200 fathoms. Obtained serial temperatures down to 1100 fathoms. Observed Ternate, Tidore, Marée, and Mortier Islands to east. At 7.15 A.M. completed observations and proceeded. At 3 P.M. altered course for the

channel between Ternate and Tidore Islands. At 6 P.M. anchored off Ternate pier in STATION 197. 13½ fathoms.

South point of Ternate distant at noon, 16 miles. Made good 88 miles. Amount of current 18 miles, direction N. 27° W.

The Expedition remained at Ternate from 6 P.M. on October 14 till 11 A.M. on AT TERNATE. October 17, 1874 (for description of Ternate see *Narr. Chall. Exp.*, vol. i. pp. 595-600). The following species are recorded in the Zoological Reports as having been obtained in the vicinity :—

REEF CORALS (Quelch, Zool. pt. 46).

ANIMALS FROM
TERNATE.

Amphihelia infundibulifera (Lamarck). One specimen; obtained at no other locality by the Challenger.

Stylophora palmata (Blainville). Obtained also at Fiji.

Seriatopora gracilis, Dana. Several specimens; obtained at no other locality by the Challenger.

„ *aculeata*, n.sp. One specimen; obtained at no other locality.

Pocillopora paucistellata, n.sp. Obtained at no other locality.

„ *squarrosa*, Dana. One specimen; obtained at no other locality by the Challenger.

Tridacophyllia manicina, Dana. Obtained also at Banda and Amboina.

Merulina prolifera, n.sp. One specimen; obtained at no other locality.

Fungia tenuidens, n.sp. One specimen; obtained at no other locality.

Madrepora rosacea, Esper. Obtained also at Philippines.

„ *secale*, Studer. One specimen; obtained at no other locality by the Challenger.

Millepora confertissima, n.sp. Obtained at no other locality.

CRINOIDEA (Carpenter, Zool. pt. 60).

Actinometra parvicirra (Müller). One specimen (shore); for distribution see the Cape.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiolepis annulosa (Blainville). Obtained also at Station 186.

Ophiocoma pica, Müller and Troschel. Obtained at no other locality by the Challenger.

Ophiothrix longipeda (Lamarck). For distribution see Station 172.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Holothuria monacaria, Lesson. One specimen; obtained also at Fiji.

TERNATE.

ANOMURA (Henderson, Zool. pt. 69).

Remipes testudinarius, Latreille. One specimen; obtained at no other locality by the Challenger. Recorded from Indo-Pacific region.

Birgus latro (Linné). One specimen; obtained also at Philippines. Recorded from Indo-Pacific region.

BRACHYURA (Miers, Zool. pt. 49).

Atergatis floridus (Linné). Two specimens; obtained also at Philippines. Recorded from Indo-Pacific region.

Neptunus (*Neptunus*) *sanguinolentus* (Herbst). One specimen; obtained also at Port Jackson and Sandwich Islands.

Thalamita prymna (Herbst). One specimen; obtained also at Station 172 and Philippines (?).

Matuta victrix, Fabricius, var. *crebrepunctata*, Miers. One specimen; the species obtained also at Philippines.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Sepioteuthis lessoniana, Férussac. One specimen (presented by the Resident); obtained also at Fiji.

In the foregoing list 24 species are enumerated, of which 5 species of Reef Corals are new to science, and were not obtained elsewhere.

ORGANISMS FROM
SURFACE NETS.

Surface Organisms.—The following are recorded in the note-books from the tow-nets on October 17 and 18 :—*Peridinium*, many Diatoms, *Pyrocystis*, Coccospheres, Rhabdospheres, *Globigerina*, *Orbulina*, *Pulvinulina*, many Radiolaria, Semper's Ctenophore larva, *Diphyes*, *Sagitta*, Copepods, *Lucifer*, *Sergestes*, Megalopæ, Zoëæ, larval Gastropods, *Atlanta*, many specimens of *Theceurybia* [= *Halopsyche*] *gaudichaudi*, *Hyalæa* [= *Carolinia*], *Styliola*, *Appendicularia*, *Salpa*, and *Leptocephalus*.

STATION 198.

Station 198 (Sounding 332), Amboina to Samboangan (see Chart 31 and Diagram 14).

October 20, 1874; lat. 2° 55' N., long. 124° 53' E.

Temperature of air at noon, 83°·8; mean for the day, 81°·4.

Temperature of water :—

STATION 198.

Surface, ...	85.0	300 fathoms, ...	45.0
25 fathoms, ...	81.2	400 "	42.0
50 "	77.2	500 "	40.3
75 "	71.8	600 "	39.5
100 "	65.0	700 "	39.0
125 "	58.0	800 "	39.0
150 "	53.6	Bottom, ...	38.9
200 "	49.2		

Density at 60° F. :—

Surface, ...	1.02551	400 fathoms, ...	1.02560
50 fathoms, ...	1.02578	800 "	1.02604
100 "	1.02586	Bottom, ...	1.02586
200 "	1.02568		

Depth, 2150 fathoms; deposit, Volcanic Mud, containing no carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At 9.30 A.M. shortened and furled sails, and proceeded under steam to sound. At 10 A.M. sounded in 2150 fathoms. At 11 A.M. put over trawl. At 1 P.M. obtained serial temperatures down to 800 fathoms. The carbonic acid was determined in water from 800 fathoms, and amounted to 39.7 milligrammes per litre. At 6.45 P.M. trawl came up with a number of specimens, pieces of volcanic conglomerate, several palm fruits, and pieces of wood and bark. The mud also contained a large number of oval arenaceous bodies, believed to be the dung of Echinoderms. The wind having fallen almost to a calm, proceeded under steam for the remainder of the day.

Distance at noon from Sibago Island, 274 miles. Made good 61 miles. Amount of current 16 miles, direction N. 68° W.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

ANIMALS FROM
TRAWL.

DEEP-SEA KERATOSA (Haeckel, Zool. pt. 82).

Psammophyllum reticulatum, n.g., n.sp. Several specimens; obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Dytaster inermis, n.g., n.sp. One specimen; obtained at no other locality.

Freyella echinata, n.sp. Obtained also at Stations 205 and 216, 1050 and 1675 fathoms.

STATION 198

OPHIUROIDEA (Lyman, Zool. pt. 14).

Amphilepis papyracea, n.sp. Obtained at no other locality.

CIRRIPIEDIA (Hoek, Zool. pt. 25).

Scalpellum compressum, n.sp. One specimen ; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Pontophilus gracilis, n.sp. Two specimens ; obtained also at Stations 133, 168, and 184.

Acantheephyra longidens, n.sp. One specimen ; obtained also at Station 285, 2375 fathoms.

Nematocarcinus altus, n.sp. One specimen ; obtained at no other locality.

Notostomus patentissimus, n.sp. One specimen ; obtained at no other locality.

„ *perlatus*, n.sp. One specimen ; obtained at no other locality.

LAMELLIERANCHIATA (Smith, Zool. pt. 35).

Arca (Barbatia) corpulenta, n.sp. Obtained also at Stations 184, 194, 216A, 271, and 300.

FISHES (Günther, Zool. pt. 57).

Porogadus rostratus, n.sp. One specimen ; obtained at no other locality.

Typhlonus nasus, n.g., n.sp. One specimen ; obtained also at Station 181. Only species of the genus.

Ipnops murrayi, n.g., n.sp. One specimen ; obtained also at Stations 124 and 133. Only species of the genus.

Bathytroctes macrolepis, n.g., n.sp. One specimen ; obtained at no other locality. The only other species of the genus (*Bathytroctes microlepis*) was taken at Station V.

In addition to the foregoing, the following are recorded in the Station-book :—*Hyalonema* sponge and spicules, several Hydroids, *Bopyrus* on Caridid shrimp, *Cystisoma*, *Petalophthalmus armiger*, *Discina* on Lamellibranch, and two small mutilated Macrurids.

Excluding Protozoa, about 50 specimens of invertebrates and fishes were obtained at this Station, belonging to about 21 species, of which 15 are new to science, including representatives of 5 new genera ; 9 of the new species were not obtained elsewhere.

Willemoes-Suhm writes : “ The peculiar little *Crangon* taken to-day was obtained previously at Station 184 ; the blind Ophidiid was taken at Station 181 ; and the other blind fish with sense-organ was found at Station 133 in the Atlantic, along with a female

of *Petalophthalmus armiger*. Here in the depths of the Indian Sea we have obtained all these animals, which have only been brought up from very deep water, together, and along with them a few shrimps, one of them affected by *Bopyrus*. The *Petalophthalmus* is a female, 50 mm. in length, with a few very large eggs in the breeding cavity. This is the third female of the Atlantic species, which is so remarkable for the prehensile organs of the male. There was also a male of *Cystisoma*." STATION 198.

RADIOLARIA (Haeckel, Zool. pt. 40).—The following species of Radiolaria were observed in the deposit from this Station :— ORGANISMS FROM THE DEPOSIT.

Cromyodruppa cepa, Haeckel.
Dictyocoryne profunda, Ehrenberg.

Artopera motacilla, Haeckel.

Surface Organisms.—The following species are recorded from the surface at this Station :— ORGANISMS FROM SURFACE-NETS.

COPEPODA (Brady, Zool. pt. 23).
Eucalanus attenuatus (Dana).
Euchaeta prestandreae, Philippi.
Candace truncata, Dana.

Oithona challengerii, n.sp.
Corycaeus varius, Dana.
Oncæa obtusa, Dana.
Saphirina metallina, Dana.

In addition, the following are recorded in the note-books :—*Peridinium*, Diatoms with *Carchesium* and *Vorticella* attached, *Globigerina*, *Pulvinulina*, many *Acanthometrae* and other Radiolaria, Acraspedote Medusæ, *Diphyes* and other Siphonophoræ, Echinoderm larvæ, *Sagitta*, Planarians, various Crustacea, Pteropods and larvæ, small *Salpæ*, *Appendicularia*, and *Fritillaria*.

Station 199 (Sounding 333), Amboina to Samboangan (see Chart 31 and Diagram 14). STATION 199.

October 22, 1874 ; lat. 5° 44' N., long. 123° 34' E.

Temperature of air at noon, 79°·8 ; mean for the day, 81°·6.

Temperature of water :—

Surface, ...	83·0	100 fathoms, ...	63·8
25 fathoms, ...	81·5	125 „	57·6
50 „	79·2	150 „	54·5
60 „	77·7	200 „	48·3
70 „	74·5	250 „	46·2
75 „	72·9	300 „	44·8
80 „	71·2	Bottom, ...	38·6
90 „	67·5		

STATION 199.

Density at 60° F. :—

Surface, ...	1.02545	200 fathoms, ...	1.02570
50 fathoms, ...	1.02591	Bottom, ...	1.02535
100 „	1.02589		

Depth, 2600 fathoms; deposit, Volcanic Mud, containing no carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At daylight observed the high land of Mindanao Island on the starboard bow. At 7.45 A.M. stopped to sound. At 8 A.M. sounded in 2600 fathoms. Obtained serial temperatures down to 300 fathoms. The carbonic acid was determined in bottom water, and amounted to 52.4 milligrammes per litre. At 11.20 A.M. completed observations and proceeded under steam, there being hardly any breeze. While sounding in the morning a boat was lowered for surface collecting. At 10 P.M. observed land on the port bow, the summit of Mount Matanae, Basilan Island. Several swallows were seen about the ship, apparently in an exhausted condition, and two were caught with the hand.

Sibago Island distant at noon, 90 miles. Made good 103 miles.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species are recorded from the surface at this Station :—

SCHIZOPODA (Sars, Zool. pt. 37).

Anchialus pusillus, n.sp.

TUNICATA (Herdman, Zool. pt. 76).

Salpa democratica-mucronata,
Forskåhl.

Mr. Murray went away in the dingey while sounding, and found the whole sea filled with Algæ, presenting the appearance of minutely-chopped hay when looked at with the water-glass. These Oscillatoriaceæ were of various kinds, the most abundant being a curled or sinuous variety, while some were quite straight, about half an inch in length, and others assumed the form of stars and faggots. There were also small masses of transparent jelly-like matter of various shapes, mostly spherical or cylindrical, containing inside small Diatoms like *Navicula*, *Coccospheres*, *Rhabdospheres*, and small *Polycystinæ*, and frequently attached to the outside the above-mentioned forms of Oscillatoriaceæ and other foreign bodies, including some Infusoria. These jelly or colloid masses rendered the tow-net quite sticky, as though covered with a coating of thin glue; they were generally about the size of peas, reminding one of the small bodies observed on February 17 in the South Indian Ocean. These organisms seemed to extend as far down as could be seen with the water-glass, and no animals were noticed moving about. In the tow-net sent down from the ship to a depth of 60 or 80 fathoms, however, were a great many things and few of these Algæ, which would therefore seem to be more or less confined to

the surface. There were also several forms of Radiolaria on the surface, and Mr. Murray STATION 199. with a hand-glass picked up a specimen of *Globigerina*, with several of the Oscillatoriaceæ and one of the jelly-masses attached; this specimen of *Globigerina* had most delicate spines, the length of the longest ones being fully eleven times the diameter of the shell. The tow-net sent down to 60 or 80 fathoms brought up the following:—*Pyrocystis*, *Peridinium* (sometimes as many as twenty in a chain), *Globigerina*, *Orbulina*, *Pulvinulina*, *Acanthometræ*, *Polycystinæ*, and other Radiolaria, many Acraspedote Medusæ, *Diphyes*, two species of Ctenophoræ, larvæ of Echinoderms (Holothurid and Asterid), *Sagitta*, Sabellid larva in tube, larvæ of *Balanoglossus* (*Tornaria*), *Saphirina* and other Copepods, small Mysid and other Crustacea and larvæ, *Atlanta*, *Macgillivraya spinigera*, *Styliola*, and other small shells, *Appendicularia*, many *Fritillariæ*.

Some organisms frequently observed in the Atlantic and Southern Indian Ocean, such as: large *Salpæ*, *Velella*, *Physalia*, *Ianthina*, *Carinaria*, another large Heteropod, *Scyllæa*, Sternoptychidæ, and small Scopelidæ, have not been noticed on the surface while cruising among the East Indian islands, since leaving Raine Island on August 31. In the afternoon a shark, belonging to the same species as that taken on July 14 (*Carcharias lamia*), was caught; it had a small *Echeneis* attached to it.

Moseley writes: "The sea was full of minute Algæ, among which there appeared to be a *Lyngbya*, *Spirillum*, *Agonium*, and *Trichodesmium*."

Station 200 (Sounding 334), Amboina to Samboangan (see Chart 31).

STATION 200.

October 23, 1874; lat. 6° 47' N., long. 122° 28' E.

Temperature of air at noon, 87°·3; mean for the day, 83°·7.

Temperature of water at surface, 85°·5.

Density at 60° F. at surface, 1·02536.

Depth, 250 fathoms; deposit, Green Mud.

At daybreak entered Basilan Strait. At 5.20 A.M. stopped near Sibago Island. Swung ship to ascertain errors of compasses and of dipping-needle. Sounded in 100 fathoms, no bottom. Position of ship at noon in Basilan Strait between Sibago and Malanipa Islands. At 2.25 P.M. completed swinging ship. Sounded in 250 fathoms, and obtained two hauls with the trawl, many specimens being procured. At 5 P.M. proceeded for Samboangan, anchoring there at 8.50 P.M.

The following species are recorded in the Zoological Reports from the trawl at this Station:—

STATION 200.
ANIMALS FROM
TRAWL.

ASTEROIDEA (Sladen, Zool. pt. 51).

Archaster typicus, Müller and Troschel. Several specimens; obtained also at Fiji and Philippines.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Asthenosoma gracile, n.sp. Obtained also at Stations 169, 184, and 219.

Phormosoma luculentum, n.sp. Obtained also at Stations 191 and 205.

„ *bursarium*, n.sp. Obtained also at Stations 205 and 232, 1050 and 345 fathoms.

SCHIZOPODA (Sars, Zool. pt. 37).

Gnathophausia longispina, n.g., n.sp. Five specimens; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Ibaccus verdi, n.sp. One specimen; obtained also at Cape Verdes.

Haliporus equalis, n.g., n.sp. Seven specimens; obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator").

Hemipenæus virilis, n.g., n.sp. Two specimens; obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator").

„ *tomentosus*, n.g., n.sp. Two specimens; obtained also at Station 177.

Pontophilus junceus, n.sp. One specimen; obtained at no other locality.

Heterocarpus ensifer, M.-Edwards. Two specimens; obtained at no other locality by the Challenger. Recorded from West Indies.

Plesionika semilævis, n.g., n.sp. Sixteen specimens; obtained also at Stations 164B, 170, and 173.

„ *brevirostris*, n.g., n.sp. One specimen; obtained at no other locality.

Palæmonella orientalis, Dana. One specimen (probably from surface); obtained at no other locality by the Challenger. Recorded from Oriental seas.

Nematocarcinus undulatipes, n.sp. Fifteen specimens; obtained also at Stations 171, 194, and 214.

ANOMURA (Henderson, Zool. pt. 69).

Munida incerta, n.sp. One specimen; obtained at no other locality.

„ *militaris*, n.sp., var. *curvirostris*, nov. One specimen; obtained also at Station 210, 375 fathoms. The species was obtained at Stations 173, 192, and Amboina.

FISHES (Günther, Zool. pts. 6 and 57).

STATION 200.

Fistularia depressa, n.sp. One specimen (probably from near the surface); obtained at no other locality.

Polyipnus spinosus, n.g., n.sp. One specimen; obtained at no other locality. Only species of the genus. Recorded subsequently from Indian Ocean ("Investigator").

Scopelus engraulis, n.sp. One specimen; obtained at no other locality. Recorded subsequently from Indian Ocean ("Investigator").

The Station-book records also :—Two specimens of *Peltogaster* and several specimens of *Bopyrus* on the Caridid shrimps.

Excluding Protozoa, over 80 specimens of invertebrates and fishes were obtained at this Station, belonging to about 22 species, of which 17 are new to science, including representatives of 5 new genera; 9 of the new species and 1 new genus were not obtained elsewhere.

Willemoes-Suhm writes: "The trawl brought up from 250 fathoms a series of animals belonging to a fauna not generally met with in such shallow water, including *Phormosoma*, *Calveria*, *Gnathophausia*, long-legged shrimps, and Stomiid fishes."

RADIOLARIA (Haeckel, Zool. pt. 40).—The following species of Radiolaria were observed in the deposit from this Station (see also Murray and Renard, Deep-Sea Deposits Chall. Exp.) :—

ORGANISMS FROM
THE DEPOSIT.

Cenosphæra setosa, Ehrenberg.
Panartus setosus, Haeckel.
Dictyastrum angulatum, Ehrenberg.

Rhopalodictyum truncatum, Ehrenberg.
Spirema diplospira, Haeckel.

Surface Organisms.—The following species are recorded from the surface at this Station :—

ORGANISMS FROM
SURFACE-NETS.

RADIOLARIA (Haeckel, Zool. pt. 40).

Saturnulus planetes, Haeckel.
Spongopila verticillata, Haeckel.
Hagiastrum mohammedis, Haeckel.
Lychnaspis longissima, Haeckel.
Psilomelissa galeata, Haeckel.
Lamprodiscus monoceros, Ehrenberg.
Lithopera bacca, Ehrenberg.
Sethoconus trochus, Haeckel.

Sethocyrtis pleuracantha, Haeckel.
Theocyrtis trachelius, Haeckel.
Dictyomitra macilenta, Haeckel.

COPEPODA (Brady, Zool. pt. 23).—Tow-net down to 80 fathoms.

Eucalanus attenuatus (Dana).
„ *setiger*, n.sp.
Rhincalanus cornutus, Dana.

STATEN 200.

Undina vulgaris, Dana.
 „ *darwinii*, Lubbock.
Temora dubia (Lubbock).
Candace truncata, Dana.
Corynura gracilis, n.g., n.sp.
Calanopia elliptica, Dana.
Pontella acuta (Dana).
 „ *lavidentata*, n.sp.
 „ *kröyeri*, n.sp.
 „ *elephas*, n.sp.
Corycaeus varius, Dana.
Lubbockia squillimana, Claus.
Copilia mirabilis, Dana.
Saphirina inæqualis, Dana.

AMPHIPODA (Stebbing, Zool. pt. 67).

Hyperia sibaginis, n.sp.

SCHIZOPODA (Sars, Zool. pt. 37).

Euphausia latifrons, n.sp.

MACRURA (Spence Bate, Zool. pt. 52).

Anebocaris quadrocylus, n.g., n.sp.

Hectarthropus exilis, n.g., n.sp.

„ *expansus*, n.g., n.sp.

PTEROPODA (Pelseneer, Zool. pt. 65).

Clio (Creseis) acicula (Rang).

„ (*Hyalocylix*) *striata* (Rang).

The sea had the same appearance as on the previous day, and the nets from the surface were covered with slime. All the organisms noted yesterday were observed, Ctenophoræ being more numerous, while Echinoderm larvæ and Crustacean larvæ were very abundant, including the larvæ of *Gnathophausia zoëa* (?). Nemertean were also present.

Willemoes-Suhm writes: "There was a great abundance of surface animals from 80 fathoms, among which were the Zoëa stages (?) of a *Gnathophausia* taken in the trawl. This would be very important as regards the systematic position of *Gnathophausia*, for the Lophogastridæ, to which it is most nearly allied, undergo the Mysid metamorphosis, whereas the only Schizopods undergoing the Zoëa stage are the Euphausidæ, to which *Gnathophausia* is allied by the presence of accessory eyes on the maxillæ; *Gnathophausia* would therefore represent a very remarkable link between the two families."

AT SAMBOANGAN.

The Challenger remained at Samboangan from 8.50 P.M. on October 23 till 6 A.M. on October 26.

October 24, 1874.

ORGANISMS FROM
SEINE-NETS.

Surface Organisms.—A strong tide ran past the place where the ship was anchored, and the tow-net procured many shore and bottom-living Foraminifera (*Rotalia*, *Miliolina*, *Cristellaria*), which may have been washed up from the bottom, along with parts of the stems of Hydroids and other things. There were besides:—*Globigerina*, *Orbulina*, Echinoderm larvæ, Sabellid larvæ with siliceous tubes, many Zoëæ and Nauphi, Pteropods and other small shells.

Station 201 (Sounding 335), Samboangan to Manila (see Chart 31).

STATION 201.

October 26, 1874; lat. $7^{\circ} 3' N.$, long. $121^{\circ} 48' E.$ Temperature of air at noon, $81^{\circ} 3$; mean for the day, $79^{\circ} 9$.Temperature of water at surface, $83^{\circ} 0$.Density at $60^{\circ} F.$ at surface, 1.02515.

Depth, 82 and 102 fathoms; deposit, Stones, Gravel.

At 4 A.M. got up steam. At 6 A.M. weighed anchor and proceeded to the west under steam. At 8.30 A.M. stopped and sounded in 82 fathoms. Put trawl over. At 9.30 A.M. hove up trawl with many specimens and proceeded. At 10.20 A.M. stopped and sounded in 102 fathoms. Put over trawl, which came up at 11.20 A.M. with several specimens. The position of both hauls is at the entrance from the Sulu Sea into Basilan Strait, about 7 miles west of Mindanao Island, and to the north-west of Caldera Point. At 11.30 A.M. made all plain sail. At 4.10 P.M. got up steam. At 5 P.M. shortened and furled sails, and proceeded under steam.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

ANIMALS FROM
TRAWL.

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Eurete schmidtii, n.sp. Two specimens; obtained at no other locality. Recorded subsequently from Japan.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Dasygorgia geniculata, n.sp. Obtained also at Station 232, 345 fathoms.

„ *axillaris*, n.sp. Obtained also at Station 171.

Ceratoisis philippinensis, n.sp. Obtained at no other locality.

Echinogorgia ramulosa (Gray). One specimen; obtained at no other locality by the Challenger. Recorded from Philippines.

ACTINIARIA (Hertwig, Zool. pt. 73).

Epizoanthus stellaris, n.sp. One colony (consisting of about 100 individuals); obtained at no other locality.

CORALS (Moseley, Zool. pt. 7).

Caryophyllia rugosa, n.sp. (?). One specimen; obtained also at Station 192.

Balanophyllia malaccensis, Kent (?). One specimen; obtained also at Station 192.

„ *parvula*, n.sp. Three specimens; obtained at no other locality.

Thecopsammia gemma, n.sp. One specimen; obtained at no other locality.

STATION 201.

DEEP-SEA MEDUSÆ (Haeckel, Zool. pt. 12).

- Polycolpa forskalii*, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus. Recorded subsequently from Red Sea.
Pegantha pantheon, n.g., n.sp. One specimen; obtained at no other locality. Only
species of the genus.

CRINOIDEA (Carpenter, Zool. pt. 60).

- Antedon balanoides*, n.sp. One specimen; obtained at no other locality.
„ *compressa*, n.sp. One specimen; obtained also at Station 192.

OPHIUROIDEA (Lyman, Zool. pt. 14).

- Ophiacantha granulosa*, n.sp. Two specimens; obtained at no other locality.
Ophiocamax vitrea, n.g., n.sp. Obtained also at Stations 192, 204, 209, and 219.
Ophiomyxa australis, Lütken. For distribution see Station 161.

ECHINOIDEA (Agassiz, Zool. pt. 9).

- Phyllacanthus baculosa* (Lamarek). Obtained also at Philippines.
Calopleurus maillardi (Michelin). Obtained also at Station 192 and Amboina.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

- Thyonidium cebuense*, Semper. One specimen; obtained at no other locality by
the Challenger. Recorded from Cebu.

GEPHYREA (Selenka, Zool. pt. 36).

- Aspidosiphon truncatus*, Keferstein. Many specimens; obtained at no other locality
by the Challenger. Recorded from Panama and Mauritius.

ANNELIDA (M'Intosh, Zool. pt. 34).

- Notopygos labiatus*, n.sp. One specimen; obtained at no other locality.
Eunoe mindanavensis, n.sp. One specimen; obtained at no other locality.
Polynoe (*Lepidonotus*) *iphionoides*, n.sp. One specimen; obtained at no other locality.
Eupholoe philippinensis, n.g., n.sp. One specimen; obtained at no other locality.
Only species of the genus.
Eunice mindanavensis, n.sp. One specimen; obtained at no other locality.

CIRRIPEDIA (Hoek, Zool. pt. 25).

- Scalpellum trispinosum*, n.sp. Three specimens; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

STATION 201.

Penæus philippinensis, n.sp. Twenty-seven specimens ; obtained also at Stations 192 and 219.

Nothocaris ocellus, n.g., n.sp. Two specimens ; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

Eupagurus (?) sp. One specimen (in shell of *Trochus*).

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Venus (*Chione*) *mindanensis*, n.sp. Obtained at no other locality.

Arca (*Acar*) *congenita*, n.sp. Obtained at no other locality.

Lima lata, n.sp. A few specimens ; obtained also at Station 109.

GASTEROPODA (Watson, Zool. pt. 42).

Trochus (*Ziziphinus*) *stephanephorus*, n.sp. Obtained at no other locality.

„ („) *transenna*, n.sp. Obtained at no other locality.

„ (*Margarita*) *pachychiles*, n.sp. Obtained at no other locality.

POLYZOA (Busk, Zool. pt. 30).

Adeonella platalea, Busk. A few fragments ; obtained at no other locality by the Challenger. Recorded from Australian seas.

BRACHIOPODA (Davidson, Zool. pt. 1).

Terebratulina sp. (?). One specimen.

Terebratella frielii, n.sp. Two specimens ; obtained also at Station 47.

FISHES (Günther, Zool. pt. 6).

Acropoma philippinense, n.sp. Several specimens ; obtained at no other locality.

Sebastes nematophthalmus, Günther. Obtained at no other locality by the Challenger.
Recorded from West Indies and Mauritius.

Opisthognathus macrolepis, Peters. One specimen ; obtained at no other locality by the Challenger.

Callionymus curvicornis, C.V. Obtained also at Hong Kong.

The Station-book records also :—Several other Sponges, an Actinian (*Bunodes* ?) not preserved, and several specimens of *Bopyrus* in Caridid shrimps.

Excluding Protozoa, over 120 specimens of invertebrates and fishes were obtained at this Station, belonging to about 46 species, of which 30 are new to science, including representatives of 5 new genera ; 23 of the new species and 2 new genera were not obtained elsewhere.

STATION 201.
ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species are recorded from the surface at this Station :—

RADIOLARIA (Haeckel, Zool. pt. 40).

Lychnaspis longissima, Haeckel.

Psilomelissa galeata, Haeckel.

Sethoconus trochus, Haeckel.

Dictyomitra macilenta, Haeckel.

AMPHIPODA (Stebbing, Zool. pt. 67).

Sympronoë sp. (?).

PTEROPODA (Pelseneer, Zool. pts. 58 and 65).

Limacina inflata (d'Orbigny).

„ *bulimoides* (d'Orbigny).

Clio (*Creseis*) *acicula* (Rang).

„ (*Hyalocylix*) *striata* (Rang).

Halopsyche gaudichaudi, Souleyet.

The tow-nets at the surface and down to a depth of 80 fathoms procured :—A few Diatoms, a few specimens of *Peridinium*, *Pyrocystis*, *Globigerina*, *Orbulina*, *Pulvinulina*, a few Radiolaria, several Acraspedote Medusæ, *Diphyes* and other Siphonophoræ, Echinoderm larvæ, *Sagitta*, Sabellid larvæ with transparent tubes (three different forms), many Aphroditacean larvæ, *Aleiopa*, larvæ of *Balanoglossus*, *Saphirina*, *Corycæus*, and other Copepods, Hyperids, Squillerichthus, Zoëæ and Nauplii of *Gnathophausia* and other Crustacea, *Phyllosoma*, *Amphion*, *Lucifer*, immense numbers of Crustacean eggs, small Gasteropod shells, Pteropods and larvæ, small transparent Cephalopod, and small fish.

STATION 202.

Station 202 (Sounding 336), Samboangan to Manila (see Chart 31 and Diagram 14).

October 27, 1874 ; lat. 8° 32' N., long. 121° 55' E.

Temperature of air at noon, 83°·8 ; mean for the day, 81°·1.

Temperature of water :—

Surface, ...	83·0	300 fathoms, ...	52·0
50 fathoms, ...	74·1	400 „	50·5
100 „	62·0	500 „	50·5
150 „	57·5	600 „	50·5
200 „	54·3	Bottom, ...	50·5
250 „	52·8		

Density at 60° F. :—

Surface, ...	1·02494	300 fathoms, ...	1·02487
50 fathoms, ...	1·02557	Bottom, ...	1·02555
100 „	1·02562		

Depth, 2550 fathoms ; deposit, Blue Mud, containing only a trace of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At daylight observed Mindanao Island on starboard bow. At 9.15 A.M. stopped and sounded in 2550 fathoms. Obtained serial temperatures down to 600 fathoms. At noon completed observations and proceeded under steam. A large flock of white and brown birds (boobies and gannets) approached the ship while sounding. STATION 202.

Distance at noon from Point Biniguan, the west extremity of Negros Island, 83 miles. Made good 92 miles. Amount of current 6 miles, direction N. 31° E.

Surface Organisms.—The following species are recorded from the surface at this Station :— ORGANISMS FROM SURFACE-NETS.

AMPHIPODA (Stebbing, Zool. pt. 67).

Phorcorrhaphis zamboangæ, n.sp.

SCHIZOPODA (Sars, Zool. pt. 37).

Stylocheiron suhmi, n.g., n.sp.

TUNICATA (Herdman, Zool. pt. 76).

Salpa scutigera-confederata, Cuvier—
Forskåhl.

In addition, the following are recorded in the note-books from the tow-nets at the surface and down to a depth of 50 fathoms:—*Peridinium*, a few Oscillatoriaceæ (*Spirillum*), Diatoms, *Globigerina*, *Orbulina*, and *Pulvinulina*—the most abundant form being *Globigerina æquilateralis*, hitherto rare—Radiolaria, Medusæ, Echinoderm larvæ, Pluteus, *Sagitta*, Planarian, *Polynoë*, Sabellid larvæ, Aphroditacean larvæ, larvæ of *Balanoglossus*, *Cypridina*, *Pachysoma punctatum*, *Saphirina*, *Corycæus*, and other Copepods, *Hyperia*, *Lucifer*, Zoëæ (including the *Zoëa elaphoceras* of Dohrn), Nauplii, *Pterotrachea* (?), *Macgillivraya*, Pteropods and larvæ, small cuttle-fish, *Appendicularia*, and several small fishes. A piece of sea-weed (like *Sargassum*) was picked up on October 28, at some distance from the land.

Willemoes-Suhm writes : “ We found at the surface, for the first time, a queer little Copepod described by Claus under the name of *Pachysoma*, which very well expresses the shape of its body. It is a Corycæid allied to *Copilina*, from which it differs by the absence of lenses and the presence of only a simple median eye.”

The Challenger anchored at Ilo-Ilo at 5 P.M. on October 28, remaining there till 5.40 A.M. on October 31, 1874. AT ILO-ILO.

Station 203 (Sounding 237), Zamboangan to Manila (see Chart 31).

STATION 203.

October 31, 1874; lat. 11° 6' N., long. 123° 9' E.

Temperature of air at noon, 82°·3; mean for the day, 81°·2.

STATION 203.

Temperature of water at surface, 85°·0.

Depth, 20 fathoms ; deposit, Mud, Sand, and Shells.

At 4 A.M. got up steam. At 5.40 A.M. weighed anchor and proceeded through Ilo-Ilo Strait. Position of ship at noon off Tomontou Point in channel between Negros and Panay Islands. At 4.30 P.M. stopped in channel between Tagubanhan Island and Anauayan Island, and obtained three hauls with the trawl in depths of 12 to 20 fathoms, many specimens being procured. At 5.40 P.M. anchored in $9\frac{3}{4}$ fathoms, Ananayan Island due south, Tagubanhan Island due north. In the evening incessant lightning, some thunder, and heavy rain showers.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

KERATOSA (Poléjaeff, Zool. pt. 31).

Cucospongia collectrix (Schulze). One specimen ; obtained also at Station 233A, 8 to 50 fathoms. Recorded from Dalmatia.

MONAXONIDA (Ridley and Dendy, Zool. pt. 59).

Halichondria (?) sp. One specimen.

TETRACTINELLIDA (Sollas, Zool. pt. 63).

Myriastra toxodonta, n.g., n.sp. One specimen ; obtained at no other locality.

ALCYONARIA (Wright and Studer, Zool. pt. 64).

Echinomuricea indomalaccensis, Ridley. One specimen ; obtained at no other locality by the Challenger. Recorded from Torres Strait and Hong Kong.

Spongodes dendrophyta, n.sp. One specimen ; obtained at no other locality.

PENNATULIDA (Köl liker, Zool. pt. 2).

Pennatula sulcata, n.sp. One specimen ; obtained at no other locality.

Scytalium tentaculatum, n.sp. Four specimens ; obtained at no other locality.

ACTINIARIA (Hertwig, Zool. pt. 73).

Sphenopus pedunculatus, n.sp. Three specimens ; obtained at no other locality.

HYDROIDA (Allinan, Zool. pt. 70).

Idia pristis, Lamouroux. Obtained also at Bahia.

CRINOIDEA (Carpenter, Zool. pt. 60).

STATION 203.

Antedon milberti (Müller). One specimen; obtained also at Station 212, 10 fathoms.
Recorded from Ceram, Borneo, Australia, Torres Strait, and
Mergui Archipelago.

ASTEROIDEA (Sladen, Zool. pt. 51).

Craspidaster hesperus (Müller and Troschel). Obtained also at Hong Kong,
10 fathoms. Recorded from Japan, Banka Strait, and Singapore.
Astropecten monacanthus, n.sp. Obtained at no other locality.
Luidia longispina, n.sp. Obtained at no other locality.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiogymna elegans, Ljungman. Obtained at no other locality by the Challenger.
Euryale aspera, Lamarck. Obtained also at Station 186.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Temnopleurus toreumaticus (Klein). Obtained at no other locality by the Challenger.
Salmacis rarispina, Agassiz. Obtained also at Stations 186 and 188.
Brissopsis luzonica (Gray). Obtained also at Stations 168, 188, 191, and 232.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Colochirus violaceus, n.sp. One specimen; obtained at no other locality.
,, *quadrangularis*, Lesson. One specimen; obtained at no other locality
by the Challenger. Recorded from Indian and Pacific Oceans.
,, *cucumis*, Semper. One specimen; obtained at no other locality by the
Challenger. Recorded from Bohol and Japan.

MACRURA (Spence Bate, Zool. pt. 52).

Penæus indicus, M.-Edwards. One specimen; obtained at no other locality
by the Challenger.
,, *monodon*, Fabricius. Two specimens; obtained also at Station 188.
,, *incisipes*, n.sp. Four specimens; obtained also at Station 190.
Alpheus leviusculus, Dana, var. One specimen; obtained at no other locality
by the Challenger. Recorded from Wakes Island, N. Pacific.

BRACHYURA (Miers, Zool. pt. 49).

Neptunus (*Neptunus*) *pelagicus* (Linné). One specimen; obtained at no other
locality by the Challenger.

STATION 203. LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Venus (*Chione*) *calophylla*, Philippi. Obtained also at Station 187 and Port Jackson.

Cardium (*Bucardium*) *mirabile*, Deshayes. Obtained at no other locality by the Challenger.

Pecten senatorius (Gmelin), var. Obtained also at Station 203, 18 fathoms.

Amussium pleuronectes (Linné). Obtained also at Station 188.

GASTEROPODA (Watson, Zool. pt. 42).

Cocculina angulata, n.sp. Obtained at no other locality.

Trochus (*Gibbula*) sp. (?).

Murex (*Tribulus*) *tenuispina*, Lamarek. Obtained at no other locality by the Challenger. Recorded from Indian Ocean, Moluccas, Torres Strait, and Darnley Island.

Nassa (*Zeuxis*) *canaliculata* (Lamarek). Obtained at no other locality by the Challenger. Recorded from Philippines.

Pyrula ternatana (Gmelin). Obtained at no other locality by the Challenger. Recorded from Ternate and Philippines.

Pleurotoma sp. (?).

„ (*Drillia*) *latisinuata*, Smith. Obtained at no other locality by the Challenger. Recorded from China.

Terebra (*Myurella*) *cælata*, Adams and Reeve. Obtained at no other locality by the Challenger. Recorded from China, Philippines, and Torres Strait.

Ranella rana (Linné). Obtained also at Stations 188, 189, 190, and Amboina.

Cassis (*Semicassis*) *pila*, Reeve. Obtained also at Station 188 and Port Jackson.

Strombus (*Gallinula*) *vittatus*, Linné. Obtained also at Fiji.

CEPHALOPODA (Hoyle, Zool. pt. 44).

Loligo galathea, Steenstrup, MS. Two specimens; obtained at no other locality by the Challenger.

FISHES (Günther, Zool. pt. 6).

Serranus diacanthus, C.V. Obtained also at Station 189 and Hong Kong.

Therapon theraps, C.V. Obtained at no other locality by the Challenger.

Scalopsis monogramma, C.V. Obtained at no other locality by the Challenger.

Tetraroge longispinis, C.V. Obtained also at Japan.

Equula fasciata, Lac. Obtained also at Fiji.

„ *dussumieri*, C.V. Obtained at no other locality by the Challenger.

Platycephalus sp. (young). Obtained also off Zebu, 18 fathoms.

STATION 203.

Amphisile scutata, Linné. Obtained at no other locality by the Challenger.

Pseudorhombus russelli, Gray. Obtained also at Station 190.

Solea ovata, Rich. Obtained also at Hong Kong.

Cynoglossus puncticeps, Rich. Obtained at no other locality by the Challenger.

Tetrodon immaculatus, Bl. Schn. Obtained also at Fiji.

„ *patoca*, H.B. Obtained at no other locality by the Challenger.

In addition to the foregoing, the following are recorded in the Station-book :—Several specimens of *Eupsammia*, Annelid, small Cirriped, *Pagurus* in shells, two large specimens of *Lupea* and other Brachyura (one only noted above).

Excluding Protozoa, about 100 specimens of invertebrates and fishes were obtained at this Station, belonging to about 60 species, of which 10 are new to science, including representative of 1 new genus; 9 of the new species were not obtained elsewhere.

Surface Organisms.—The following are recorded in the note-books from the tow-nets on October 31 and November 1 :—Diatoms in immense numbers, *Vorticella* abundant on some of the Diatoms, *Pyrocystis*, *Peridinium* (*Ceratium*) *tripos* and another species, Radiolaria, larvæ of Cirripeds. The sarcode matter of most of the Diatoms had quite the same appearance as in *Pyrocystis*.

ORGANISMS FROM
SURFACE-NETS.

Stations 204 to 204B (Soundings 338 to 340), Samboangan to Manila (see Chart 31).

STATIONS 204
TO 204B.

November 2, 1874.

Temperature of air at noon, 82°·3; mean for the day, 82°·2.

Temperature of water at surface, 84°·0.

Density at 60° F. at surface, 1·02517.

At 5.30 A.M. got up steam. At 6.30 A.M. shortened and furled sails, and proceeded under steam. At 10 A.M. stopped and sounded in 705 fathoms, deposit Blue Mud, containing 11·31 per cent. of carbonate of lime (Station 204). In this deposit were numerous pellets, believed to be the dung of Holothurians and other Echinoderms, as well as minute stellate bodies, supposed to be Holothurian spicules. Proceeded through the channel between Tablas and Romblon Islands. At 2.30 P.M. stopped and sounded in 100 fathoms, deposit Green Mud, containing 56·18 per cent. of carbonate of lime, density at bottom 1·02569 (Station 204A). Put over trawl, which came up at 3 P.M. with numerous specimens. At 3.45 P.M. stopped and sounded in 115 fathoms, deposit Green Mud, containing 50·40 per cent. of carbonate of lime (Station 204B). Put over

STATIONS 204
TO 204B.

trawl, which came up at 5 P.M. with numerous specimens. Proceeded through the channel between Simara and Banton Islands. Lightning with passing showers at night.

ANIMALS FROM
TRAWL.

The following species are recorded in the Zoological Reports from the trawlings in 100 to 115 fathoms (Stations 204A and 204B):—

ASTEROIDEA (Sladen, Zool. pt. 51).

Astropecten imbellis, n.sp. Obtained at no other locality.

Luidia aspera, n.sp. Obtained also at Station 219 and Samboangan, 150 and 10 fathoms.

Nymphaster symbolicus, n.g., n.sp. Obtained also at Stations 188 and 192 (var.).

Leptogonaster cristatus, n.g., n.sp. Obtained at no other locality. Only species of the genus.

Pholidaster squamatus, n.g., n.sp. Obtained at no other locality. The only other species of the genus (*Pholidaster distinctus*) was taken at Station 192.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophiocamax vitrea, n.g., n.sp. Obtained also at Stations 192, 201, 209, and 219.

Ophiothrix capillaris, n.sp. Obtained also at Station 209, 100 fathoms.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Dorocidaris (Cidaris) papillata, Leske. For distribution see Station 24.

Goniocidaris florigera, n.sp. Obtained also at Station 192.

Micropyga tuberculata, n.g., n.sp. Obtained also at Stations 174, 209, and 219. Only species of the genus.

Asthenosoma tessellatum, n.sp. One specimen; obtained at no other locality.

CIRRIPEDIA (Hock, Zool. pt. 25).

Megalasma striatum, n.g., n.sp. Eight specimens (attached to Echini spines); obtained at no other locality. Only species of the genus.

Scalpellum rubrum, n.sp. One specimen; obtained at no other locality.

Balanus tenuis, n.sp. Four specimens; obtained at no other locality.

STOMATOPODA (Brooks, Zool. pt. 45).

Squilla leptosquilla, n.sp. One specimen; obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Nephrops thomsoni, n.sp. One specimen; obtained also at Station 166.

Penaeus fissurus, n.sp. Three specimens; obtained also at Stations 190 and 209.

ANOMURA (Henderson, Zool. pt. 69).

STATIONS 204
TO 204B.

Pagurus striatus, Latreille. One specimen (in shell of *Ranella fijiensis*, with attached spotted anemone); obtained also at Zebu reefs. Recorded from Mediterranean, North Atlantic, and Japan.

Eupagurus spinulentus, n.sp. One specimen (in shell of *Fusus nipponicus*); obtained at no other locality.

Pagurodes piliferus, n.g., n.sp. One specimen; obtained also in Arafura Sea (?).

Paguroopsis typicus, n.g., n.sp. Two specimens; obtained at no other locality. Only species of the genus.

Galathea subsquamata, Stimpson. One specimen; obtained at no other locality by the Challenger. Recorded from Japan.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

Pecten vitreus (Chemnitz). Obtained also at Stations 207, 209, 232, 307, 308, 310, and 311, 100 to 700 fathoms.

GASTEROPODA (Watson, Zool. pt. 42).

Fusus nipponicus, Smith. Obtained at no other locality by the Challenger. Recorded from Nippon Island.

Pleurotoma (Surcula) deshayesii, Doumet. Obtained at no other locality by the Challenger. Recorded from China.

Terebra (Myurella) mamillata, n.sp. Obtained at no other locality.

Ranella fijiensis, n.sp. Obtained also at Station 173.

Cassis (Bezoardica) wyvillei, n.sp. Obtained at no other locality.

Xenophora pallidula (Reeve). One specimen (beset with many other shells); obtained at no other locality by the Challenger. Recorded from Japan.

FISHES (Günther, Zool. pts. 6 and 57).

Champsodon vorax, Günther. Numerous specimens; obtained also at Stations 192 and 219.

Lioscorpius longiceps, n.g., n.sp. Obtained also at Station 192.

Lophius naresii, n.sp. Obtained also at Station 219, 150 fathoms, and Admiralty Islands.

Callionymus calauropomus, Rich. Obtained also at Station 162.

Monacanthus tessellatus, n.sp. Obtained at no other locality.

The Station-book records also an Actinian.

(SUMMARY OF RESULTS CHALL. EXP.—1893).

STATIONS 204
TO 204A.

Excluding Protozoa, nearly 100 specimens of invertebrates and fishes were obtained in these trawlings, belonging to 35 species, of which 25 are new to science, including representatives of 9 new genera; 13 of the new species and 3 new genera were not obtained elsewhere.

Willemoes-Suhm writes: "The Philippines are rich in Cirripedia, having not less than eighteen species; to-day we took two, one on a *Cidaris* and one on the queer shell of a *Phorus*. One of the Crustacea was a fine normal *Nephrops* distinguished by the shortness of its antennal scale."

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The following species are recorded from the surface (November 2 and 3):—

TUNICATA (Herdman, Zool. pt. 76).

Pyrosoma giganteum, Lesueur (?).

FISHES (Günther, Zool. pt. 78).

Scopelus caninianus (C.V.), (young).

In addition, the following are recorded in the note-books:—A few Diatoms, *Vorticella* on Diatoms, *Peridinium*, *Pyrocystis*, Oscillatoriaceæ, *Globigerina*, *Orbulina*, *Pulvinulina*, Radiolaria, larva of *Nautactis*, Medusæ and eight-armed larva (*Cyanea*), *Diphyes* and other Siphonophoræ, Echinoderm larvæ, Pluteus, *Sagitta*, *Alciopa*, larvæ of Terebellids, Sabellids, and Aphroditaceans, *Pilidium*, many Copepods (*Copilia*, *Corycæus*, &c.), *Oxycephalus*, Crustacean larvæ, larval Lamellibranchs, *Cardiopoda*, *Hyalæa* [= *Carolinia*], *Cymbulia* (from the trawl), Pteropod larvæ, *Appendicularia*, small *Salpæ*, *Fritillaria*, young *Amphioxus*.

Willemoes-Suhm writes: "The trawl caught a *Cymbulia* on the surface, three species of which are known from the Mediterranean and one from the Pacific. As far as I am aware we have never taken it alive, and only once (at Gibraltar) a dead shell was picked up by Murray on the beach."

AT MANILA.

The Challenger anchored at Manila at 2.30 P.M. on November 4, remaining there till 2 P.M. on November 11, 1874.

ORGANISMS FROM
SURFACE-NETS.

Surface Organisms.—The water in Manila Harbour generally looked very muddy, and contained a good deal of fine mud apparently from the river. There were also many small green masses, probably an Alga (*Halosphæra*). There were many Diatoms of different species, one of which (*Bacteriastrum* ?) was nearly always crowded with *Vorticella*, while none were noticed on any of the other species. Several kinds of Infusoria were observed, and very many specimens of *Peridinium* (*Peridinium tripos* and two other species), along with *Pyrocystis* and *Noctiluca*. *Noctiluca* had evidently been feeding on Diatoms and other small organisms, as these were frequently found

embedded in its sarcode. In addition, there were :— *Sagitta*, Copepods, larval Echinoderms, Lamellibranchs, and Pteropods, *Appendicularia*, &c. STATIONS 204 TO 204B.

Station 205 (Sounding 341), Manila to Hong Kong (see Chart 31 and Diagram 14). STATION 205.

November 13, 1874; lat. $16^{\circ} 42'$ N., long. $119^{\circ} 22'$ E.

Temperature of air at noon, $81^{\circ} 3$; mean for the day, $81^{\circ} 1$.

Temperature of water :—

Surface, ...	82.0	200 fathoms, ...	51.2
10 fathoms, ...	81.5	250 „	48.0
20 „	79.5	300 „	45.3
30 „	76.5	400 „	42.0
40 „	73.2	500 „	40.0
50 „	69.8	600 „	38.8
60 „	66.8	700 „	37.8
70 „	64.2	800 „	37.0
80 „	62.0	900 „	37.0
90 „	60.0	1000 „	37.0
100 „	58.6	Bottom, ...	37.0
150 „	55.0		

Density at 60° F. at surface, 1.02502; bottom, 1.02574.

Depth, 1050 fathoms; deposit, Blue Mud, containing 22.11 per cent. of carbonate of lime (see Murray and Renard, Deep-Sea Deposits Chall. Exp.).

At daylight observed the west coast of Luzon on starboard beam. Got up steam. At 7 A.M. proceeded under steam. At 9.15 A.M. shortened and furled sails, and sounded in 1050 fathoms. At 10 A.M. put trawl over. Weather fine, but a heavy swell from the N.E. Obtained serial temperatures down to the bottom. At 4 P.M. trawl came up with several pieces of pumice, some pieces of wood and leaves, and many specimens. At 4.45 P.M. made all plain sail. About sunset got into the N.E. monsoon in earnest, accompanied by a rise of the barometer and a fall of the thermometer; velocity of wind 5. At 11.15 P.M. maintop-gallant sheet carried away. Night stormy and wet with high sea.

Distance at noon from Pratas Island, 287 miles; from N.E. head of Lema Island, near Hong Kong, 432 miles. Made good 99 miles. Amount of current 22 miles, direction N. 25° W.

The following species are recorded in the Zoological Reports from the trawl at this Station :—

STATION 205.
ANIMALS FROM
TRAWL.

HEXACTINELLIDA (Schulze, Zool. pt. 53).

Hyalonema (?) sp. Fragment.

CRINOIDEA (Carpenter, Zool. pt. 60).

Eudiocrinus varians, n.g., n.sp. Two specimens; obtained at no other locality.

ASTEROIDEA (Sladen, Zool. pt. 51).

Pontaster trullipes, n.g., n.sp. Obtained at no other locality.

Freyella echinata, n.sp. Obtained also at Stations 198 and 216.

OPHIUROIDEA (Lyman, Zool. pt. 14).

Ophioglypha radiata, n.sp. Obtained at no other locality.

Ophiomitra plicata, n.sp. Obtained also at Stations 170 and 214.

Ophiacantha or *Ophiothamnus* sp. (?).

ECHINOIDEA (Agassiz, Zool. pt. 9).

Podocidaris prionigera, n.sp. Obtained also at Station 218, 1070 fathoms.
Recorded subsequently from Indian Ocean ("Investigator").

Phormosoma luculentum, n.sp. Obtained also at Stations 191 and 200.

„ *bursarium*, n.sp. Obtained also at Stations 200 and 232.

Cystechinus clypeatus, n.g., n.sp. Obtained also at Stations 133 and 334.

ANNELIDA (McIntosh, Zool. pt. 34).

Serpula philippinensis, n.sp. Obtained at no other locality.

MACRURA (Spence Bate, Zool. pt. 52).

Haliporus lavis, n.g., n.sp. One specimen; obtained also at Stations 104 and 106.

Benthesicymus pleocanthus, n.g., n.sp. Two specimens; obtained also at Stations 23 and 250.

„ *altus*, n.g., n.sp. One specimen; obtained also at Stations 133, 170, 171, 174, 184, 214, 232, and 235.

Dorodotes reflexus, n.g., n.sp. Two specimens; obtained also at Station 195.

Nematocarcinus productus, n.sp. Six specimens; obtained also at Stations 177, 195, and 237.

Hymenodora rostrata, n.sp. One specimen; obtained also at Stations 184 and 245.

ANOMURA (Henderson, Zool. pt. 69).

Parapagurus abyssorum, M.-Edwards, MS. One specimen (in shell of *Pleurotoma*);
for distribution see Station 56.

LAMELLIBRANCHIATA (Smith, Zool. pt. 35).

STATION 205.

Cryptodon luzonicus, n.sp. Obtained at no other locality.

GASTEROPODA (Watson, Zool. pt. 42).

Pleurotoma phymatias, n.sp. Obtained at no other locality.

POLYPLACOPHORA (Haddon, Zool. pt. 43).

Leptochiton belknapi, Dall. Two specimens; obtained at no other locality by the Challenger. Recorded from North Pacific.

FISHES (Günther, Zool. pt. 57).

Bathyonus compressus, n.g., n.sp. One specimen; obtained also at Stations 107 and 184.*Acanthonus armatus*, n.g., n.sp. One specimen; obtained also at Station 218, 1070 fathoms. Only species of the genus.

In addition to the foregoing, the Station-book records:—*Palythoa*, Coral, three Holothuridæ, and a naked Mollusc.

Excluding Protozoa, over 50 specimens of invertebrates and fishes were obtained at this Station, belonging to about 28 species, of which 20 are new to science, including representatives of 8 new genera; 6 of the new species were not obtained elsewhere.

Surface Organisms.—The following species are recorded from the surface at this Station:—

ORGANISMS FROM
SURFACE-NETS.

RADIOLARIA (Haeckel, Zool. pt. 40).

Lychnaspis longissima, Haeckel.*Psilomelissa galeata*, Haeckel.*Sethoconus trochus*, Haeckel.*Dictyomitra macilenta*, Haeckel.

TUNICATA (Herdman, Zool. pt. 76).

Salpa runcinata-fusiformis,

Chamisso—Cuvier.

In addition, the following are recorded in the note-books (November 12 and 13):—*Peridinium*, *Pyrocystis*, Oscillatoriaceæ, a few large Diatoms, *Globigerina*, *Orbulina*, *Pulvinulina*, Acanthometræ and other Radiolarians, Medusæ, *Diphyes*, Echinoderm larvæ, *Sagitta*, *Alciopa*, Aphroditacean larvæ, *Pilidium*, Copepods, *Lucifer*, and other Crustaceans, larval Lamellibranchs, Pteropods and larvæ, *Cranchia*, *Salpa* (two species), and *Appendicularia*. In the stomachs of the *Salpæ* there were Coccospheres, Rhabdospheres (both varieties), and many Acanthometræ. On November 13 a shark

STATION 205.

was caught belonging to the same species as those hitherto taken at sea (*Carcharias lamia*). There were several about, and they were attended by "suckers" (*Echeneis remora*), which were sometimes attached to the sharks, sometimes followed them, and sometimes swam in front, just at the shark's snout.

AT HONG KONG.

The Challenger remained at Hong Kong from November 16, 1874, till January 6, 1875; the deposit in the harbour at a depth of 7 fathoms was composed of Mud and Shells, containing 53.52 per cent. of carbonate of lime. All the zoological and other specimens collected during the cruise between Sydney and Hong Kong were landed at Kowloon and placed in a house belonging to the dockyard, where they were carefully catalogued and packed by Mr. Murray, one hundred and twenty-nine cases and several casks being placed on board H.M.S. "Adventure" on January 1, 1875, for transmission to England (for description of Hong Kong see *Narr. Chall. Exp.*, vol. i. pp. 635-639).

ANIMALS FROM
HONG KONG.

The following species are recorded in the Zoological Reports as having been procured in the vicinity of Hong Kong:—

ASTEROIDEA (Sladen, Zool. pt. 51).

Craspidaster hesperus (Müller and Troschel). (10 fathoms); obtained also at Station 203.

Astropecten polyacanthus, Müller and Troschel. (Beach); obtained also at Port Jackson, Japan, and Admiralty Islands.

ECHINOIDEA (Agassiz, Zool. pt. 9).

Lovenia subcarinata, Gray. Several specimens (10 fathoms); obtained at no other locality by the Challenger.

Schizaster japonicus, n.sp. (10 fathoms); obtained also at Station 188 and Japan.

HOLOTHURIOIDEA (Théel, Zool. pt. 39).

Ocnus typicus, n.sp. Two specimens (10 fathoms); obtained at no other locality.

ANNELIDA (McIntosh, Zool. pt. 34).

Dasychone orientalis, n.sp. Several specimens (10 fathoms); obtained at no other locality.

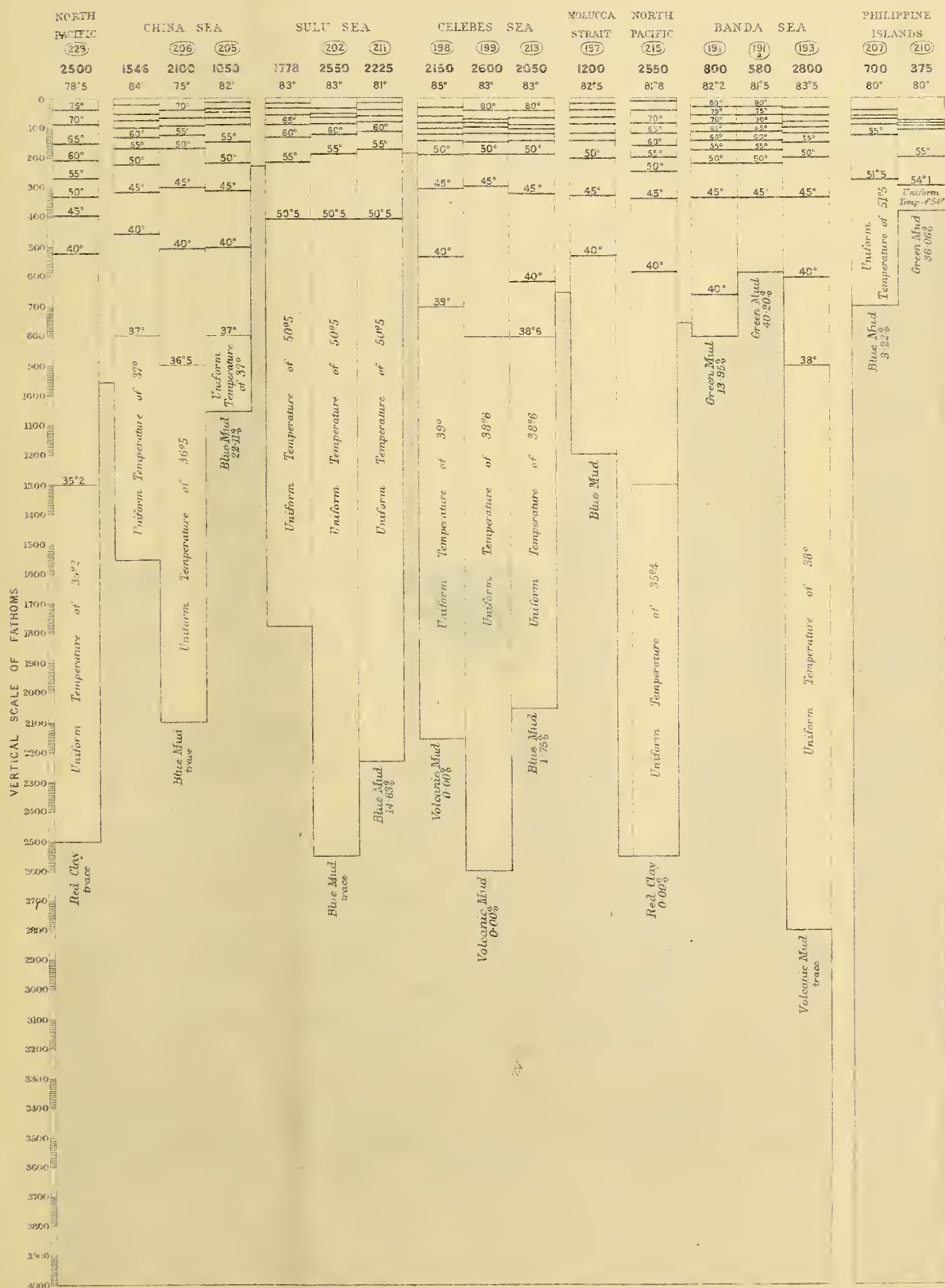
OSTRACODA (Brady, Zool. pt. 3).—From anchor-mud in the harbour, 7 fathoms.

Pontocypris attenuata, Brady. Obtained also at New Guinea. Recorded from Mauritius.

Bavardia foveolata, Brady. For distribution see Station 33.

Diagram showing the Distribution of Temperature in the Seas
enclosed by the Islands of the EASTERN ARCHIPELAGO.

For explanation of Symbols see Appendix 1.





- Cythere crispata*, Brady. Obtained also at Station 187 and Port Jackson. HONG KONG.
 „ *cymba*, Brady. Obtained also at Station 233B, 15 fathoms. Recorded from Hong Kong.
 „ *goujoni*, Brady. Obtained also at Station 187 and Port Jackson.
 „ *darwini*, Brady. Obtained also at Station 233B, 15 fathoms. Recorded from Java.
 „ *cribriformis*, Brady. Obtained at no other locality by the Challenger.
Loxoconcha sinensis, Brady. Obtained also at Station 233B, 15 fathoms. Recorded from Hong Kong.
Bythocythere orientalis, Brady. Obtained also in Torres Strait.
Cytherella cingulata, Brady. Obtained also at Stations 187, 189, and Port Jackson.

MACRURA (Spence Bate, Zool. pt. 52).

- Alpheus rapax*, Fabricius. One specimen (10 fathoms); obtained at no other locality by the Challenger.
Nauticaris unirecedens, n.g., n.sp. One specimen; obtained at no other locality.

ANOMURA (Henderson, Zool. pt. 69).

- Spiropagurus spiriger* (De Haan). One specimen in shell of *Pleurotoma* (10 fathoms); for distribution see Torres Strait.
Porcellana serratifrons, Stimpson. One specimen (10 fathoms); obtained also in Arafura Sea.
Raphidopus ciliatus, Stimpson. One specimen (10 fathoms); obtained at no other locality by the Challenger. Recorded from Hong Kong.

BRACHYURA (Miers, Zool. pt. 49).

- Neptunus (Amphitrite) hastatoides* (Fabricius). Several specimens (10 fathoms); obtained also at Stations 188, 233B, and Japan.
Goniosoma cruciferum (Fabricius). One specimen (7 fathoms); obtained at no other locality by the Challenger.
Arcania septemspinosa (Fabricius). Three specimens (10 fathoms); obtained also at Station 233B, 15 fathoms, and Japan.
Leucosia craniolaris (Linné). Two specimens (10 fathoms); obtained also at Stations 188, 190, and Japan.
Dorippe facchino (Herbst). One specimen (10 fathoms); obtained at no other locality by the Challenger.

GASTEROPODA (Watson, Zool. pt. 42).

- Pleurotoma (Surcula) tuberculata*, Gray. (10 fathoms); obtained also in Arafura Sea.

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TUNICATA (Herdman, Zool. pt. 17).

Corolla japonica, n.sp. Two specimens (10 fathoms) ; obtained also at Station 233A, 3 to 50 fathoms, and Japan.

FISHES (Günther, Zool. pt. 6).

Serranus diacanthus, C.V. Obtained also at Stations 189 and 203.

Mesoprion vitta, Quoy and Gaimard. Obtained at no other locality by the Challenger.

Chilodactylus zonatus, C.V. Obtained at no other locality by the Challenger.

Sebastes marmoratus, C.V. Obtained at no other locality by the Challenger.

Scorpana cirrhosa, Thunb. Obtained at no other locality by the Challenger.

Drepane punctata, Linné. Obtained at no other locality by the Challenger.

Platycephalus japonicus, Tiles. Obtained at no other locality by the Challenger.

„ *insidiator*, Forsk. Obtained also at Australia and Japan.

Stromateus argenteus, Bl. Obtained at no other locality by the Challenger.

Gobius knutteli, Bleeker. Obtained at no other locality by the Challenger.

Eleotris sinensis, Lac. Obtained at no other locality by the Challenger.

Apocryptes polyophthalmus, Günther. Obtained at no other locality by the Challenger.

Callionymus curvicornis, C.V. Obtained also at Station 201.

Trypauchen vagina, Bl. Schn. Obtained also at Amboina and Japan.

„ *chinensis*, Steindachner. (10 fathoms) ; obtained at no other locality by the Challenger.

Ophiocephalus maculatus, Lac. Obtained at no other locality by the Challenger.

Pseudoscarus nuchipunctatus, C.V. Obtained also at Fiji.

Pseudorhombus cinnamomeus, Schleg. (7 fathoms) ; obtained at no other locality by the Challenger.

Arnoglossus tenuis, n.sp. Obtained at no other locality.

Solea ovata, Rich. (7 fathoms) ; obtained also at Station 203.

Cynoglossus melampetalus, Rich. (7 fathoms) ; obtained at no other locality by the Challenger.

Somrda argyrophanes, Rich. Obtained at no other locality by the Challenger.

Cyprinus auratus, Linné. Obtained also at Japan.

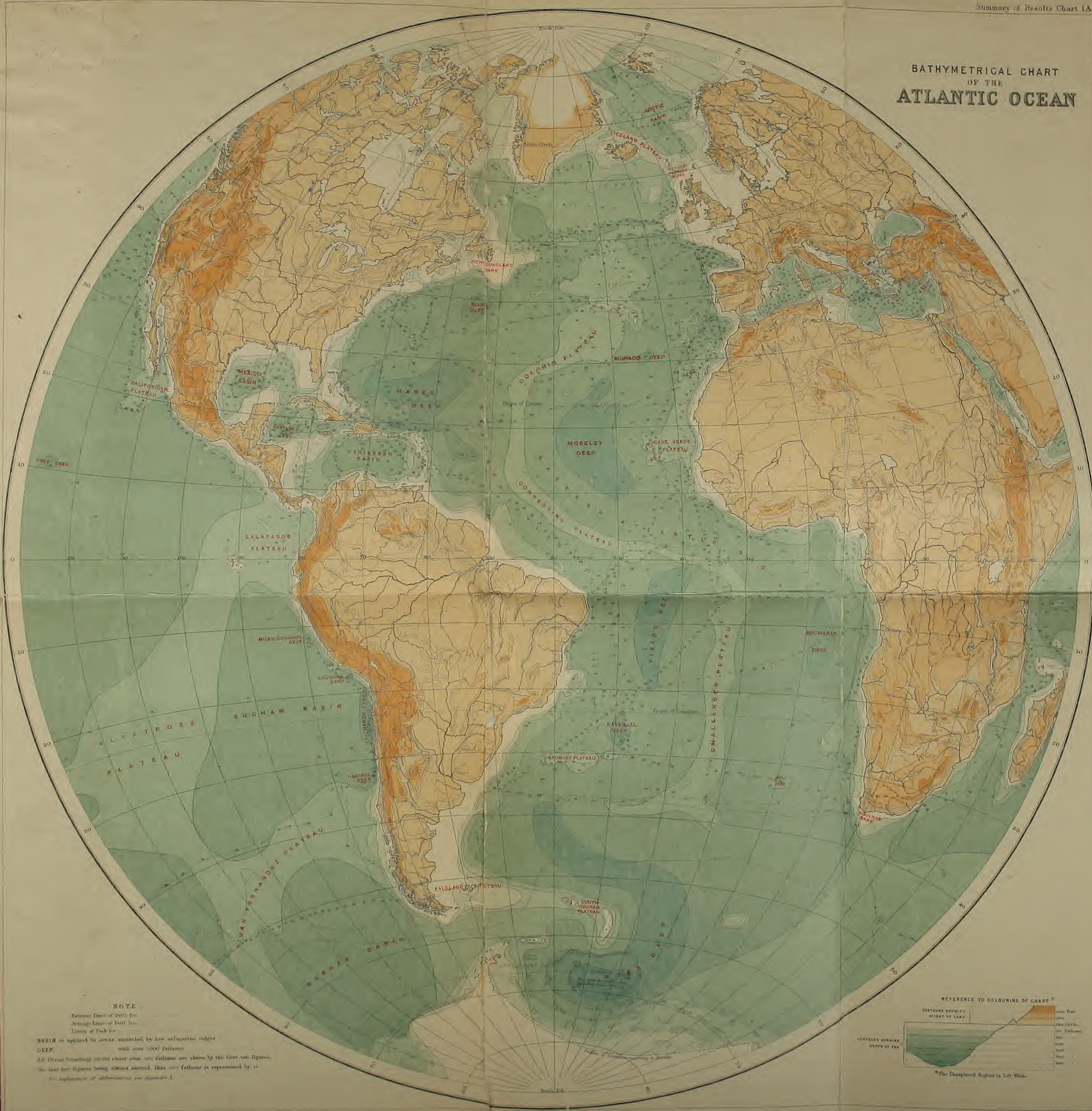
In the foregoing list 51 species are enumerated, of which 6 are new to science, including representative of 1 new genus ; 4 of the new species were not obtained elsewhere.

ORGANISMS FROM
SURFACE NETS.

Surface Organisms.—The surface water in the Bay of Hong Kong during the stay was always brilliantly phosphorescent, which was due chiefly to the presence of immense numbers of *Noctiluca*, the majority being large and beautiful specimens in the tailed



BATHYMETRICAL CHART
OF THE
ATLANTIC OCEAN



NOTE

Extremes of Depth
Average Line of Depth
Line of Bath

BASIN is applied to areas enclosed by low submarine ridges
with over 2000 fathoms
All Ocean Soundings on the chart over 100 fathoms are shown by the first two figures
the last two figures being always omitted; thus 1000 fathoms is represented by 10
For explanation of abbreviations see Appendix 1.

REFERENCE TO COLOURING OF CHART



*The Unexplored Region is Left White.

BATHYMETRICAL CHART OF THE PACIFIC OCEAN



NOTE

Extreme Limit of Drift Ice

Average Limit of Drift Ice

Limits of Pack Ice

BASIN is applied to spaces enclosed by low submarine ridges with over 2000 fathoms

DEEP All Ocean Soundings on the chart over 1000 fathoms are shown by the first two figures, the last two figures being always omitted, thus 4375 fathoms is represented by 43

For explanation of symbols see Appendix I.

REFERENCE TO COLOURING OF CHART



* The Unexplored Region is left White

BATHYMETRICAL CHART
OF THE
INDIAN OCEAN



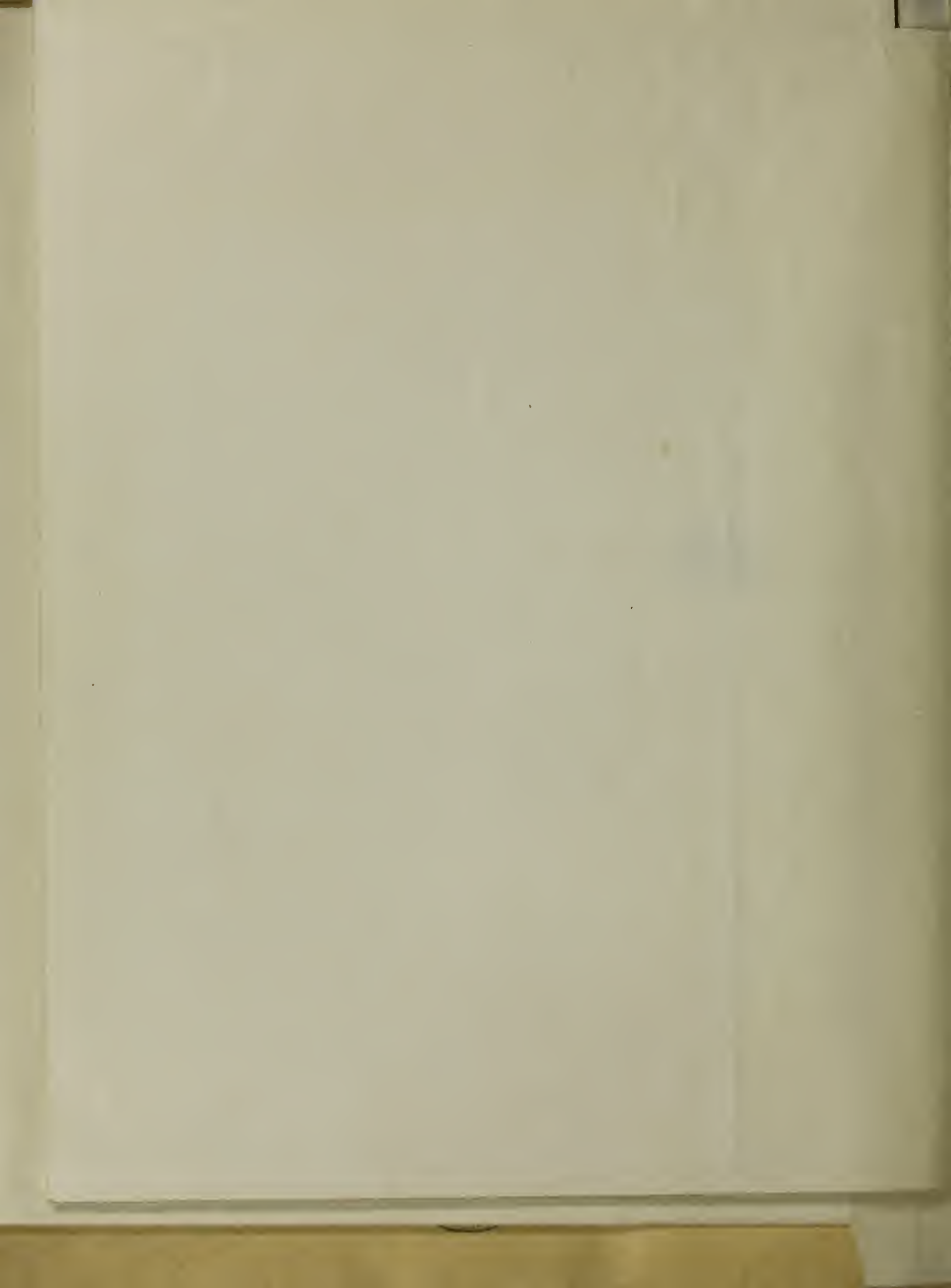
NOTE

Extremes limits of Depth are shown by the outermost contour lines.
Average limits of Depth are shown by the inner contour lines.
BASIN is applied to areas surrounded by low submarine ridges.
DEEP is applied to areas with over 5000 fathoms.
All ocean soundings in this chart are in fathoms, and shown by the four last figures.
On the last two figures being always omitted, that 100 fathoms is represented by 00.
The explanation of abbreviations, see Appendix I.

REFERENCE TO COLOURING OF CHART



* The Continental Shelf is left White





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& BOUND
11 JUN 1987

